NGK

NGK INSULATORS

NGK Group Sustainability Website Data 2024

2024

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Message from the President

We will advance toward the goal of becoming a sustainable company that can solve issues facing society through our unique ceramic technologies.

President
Shigeru Kobayashi

I believe that a company's existence is meaningless unless it contributes to resolving social issues. At the NGK Group, our purpose is to contribute to society by using ceramic technologies to resolve social issues. Across generations and in the face of a changing environment, we must never stray from this guiding principle.

In April 2023, we formulated the NGK Group Basic Sustainability Policy to further clarify the direction the NGK Group intends to take. And, we also identified materiality. In 2024, we disclosed targets and results for each materiality.

My greatest dream is to use ceramic technologies to contribute to reducing greenhouse gases. At the same time, reducing greenhouse gases is a major medium-term issue for our Company, and our greatest mission. Ceramics can certainly lead to resolving the social issues that, in turn, help prevent global warming. I hope to fulfill this mission by collaborating with other companies towards accomplishing what we cannot achieve on our own.

We are steadily moving towards achievement of the goal we have set for this purpose: New Value 1000 (NV1000). It sets a target of 100 billion yen or more in sales from newly

commercialized products by 2030. Many employees are keenly aware of NV1000, and I believe people are able to more freely take the approach of, “Well, I might fail, but it’s still worth trying.”

This kind of challenge is what has spurred the current development of new products for realizing carbon neutrality. These include direct air capture (DAC) ceramics, which absorb and recover carbon dioxide from the atmosphere, and sub-nano ceramic membranes, which separate specific gases and liquids from mixed gases and liquids at the molecular level. These types of products are successes achieved by taking on challenges. Also, our organic compound crystal search service and NR-Power Lab Co., Ltd., a power operator founded jointly with Ricoh Company, Ltd., were major gains for the NGK Group and represent our expansion into businesses focused on providing services beyond manufacturing.

I believe that the most important critical mission of a company is to be trusted by its stakeholders. I view enterprise value as an expression of how much a company is contributing to the world. If we listen carefully to all stakeholders, I believe that we have the power to create more products that can make a greater contribution to society.

To achieve our ultimate goal of becoming a company trusted by all stakeholders. The NGK Group will continue to move forward and pursue constant innovation and challenges.

ESG Management

NGK Group Basic Sustainability Policy

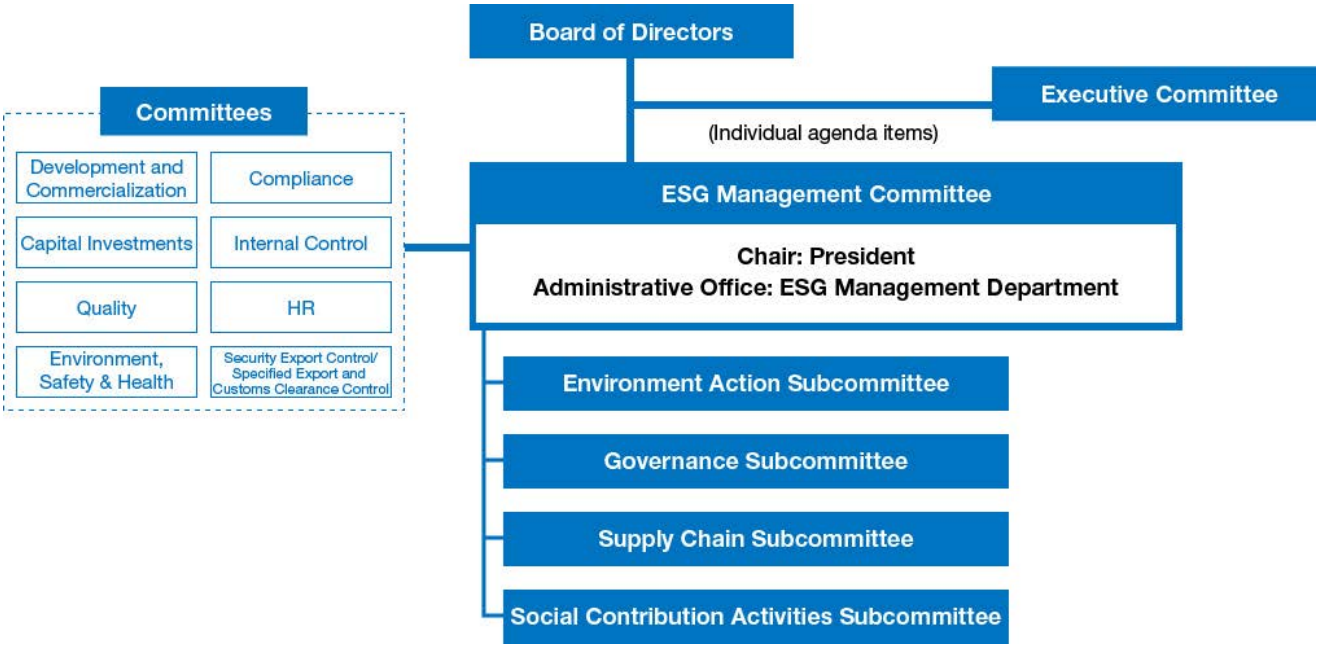
Since our founding, the NGK Group has worked to solve social issues through our unique ceramic technologies. Based on the NGK Group Philosophy of Enriching Human Life by Adding New Value to Society, we aim to continue contributing to the realization of a sustainable society and to earn the trust of society by meeting its expectations toward us. We have incorporated this thinking into the NGK Group Basic Sustainability Policy in April 2023.

NGK Group Basic Sustainability Policy ›

ESG Action System

ESG (Environmental, Social, Governance) is central to the management of the NGK Group. Amidst ongoing overseas business expansion, we seek to ensure greater managerial transparency and autonomy within an environment which cultivates within every member of the NGK Group a sense of fairness accompanied by decision-making and action in accordance with international norms.
In 2019, the ESG Committee was established as a body for information sharing, opinion exchange and policy discussion among senior management. In 2021, the ESG Management Department was established in order to handle lateral implementation of ESG-related activities across the NGK Group and to strengthen information dissemination about the activities. Furthermore, in April 2022, the ESG Committee was reorganized as the ESG Management Committee, which is chaired by the President, as a body reporting to the Board of Directors for strengthening initiatives on sustainability issues that incorporate elements of ESG and the SDGs.

ESG Action System



Key ESG Activity Themes and Achievements

The NGK Group views ESG (Environmental, Social, Governance) as the core of business management. We define materiality based on the NGK Group Basic Sustainability Policy. And we work to enhance the effectiveness of governance to serve as the foundation of value creation as we promote environmental and societal initiatives.

NGK Group Basic Sustainability Policy

Materiality	
E	- Initiatives for climate change - Promotion of resource recycling - Prevention of environmental pollution - Conservation and restoration of biodiversity
S	- Pursuit of quality and product safety - Contribution to digital social infrastructure - Enhancing value of human resource - Respecting human rights - Promotion of sustainable procurement
Foundation of Value Creation (Governance)	
G	- Compliance - Risk management - Corporate governance

Materiality ›

Key ESG Activity Themes in FY2024

Key themes	Main activities	Activity leader
Environmental initiatives aimed at achieving Vision	- Internal carbon pricing towards net zero CO_2 emissions, energy-saving, shift to non-fossil fuels, use of renewable energy - Formulation and follow-up on 5-Year Environmental Action Plan and annual plan - Response to a recycling-oriented society - Response to biodiversity	Environment Action subcommittee
Initiatives on respect for human rights	- NGK Group human rights due diligence - Promotion of hiring, cultivation of human resources and improvement of labor practices - Diversity and inclusion	HR Committee Environment, Safety & Health Committee
Supply chain rollout	- Reviewing Supply-Chain CSR Guidelines and establishing Supplier Code of Conduct - Implementation of CSR procurement (human rights, labor, environment, and fair business activities, etc.) - Supply chain human rights due diligence - Assessment of Scope 3 in carbon neutrality	Supply Chain subcommittee HR Committee
Continuous review of the governance system	- Integration of management with sustainability issues - Strengthening of the supervisory function of the Board of Directors - Compliance with Corporate Governance Code - Formulating and revising policies related to the Corporate Business Principles, Code of Conduct and sustainability - Ensuring of appropriate information disclosure and transparency (complying with domestic and international standards for disclosure)	Governance subcommittee
Social Contribution Activities	- Formulating, implementing, and carrying out NGK Group Social Contribution Activities Policy - Support for foreign nationals	Social Contribution Activities subcommittee

FY2023 ESG Management Committee Achievements

Times	Date	Topics of discussion
1st	April 2023	- Positioning of ESG Management Committee - Awareness of sustainability issues facing our group - NGK Group Basic Sustainability Policy and materiality disclosures - Annual action plans for each subcommittee
2nd	May 2023	- Establishment of NGK Group Code of Conduct - Revisions to Corporate Governance Report
3rd	June 2023	- 5th 5-Year Environmental Action Plan - Green bond reporting - Formulating Social Contribution Activities Policy - Enforcement of NGK Group Code of Conduct - Revisions to Corporate Governance Report - Production status report on NGK Report 2023
4th	September 2023	- Status of response to Group ESG issues Environmental - Value Acquisition Plan - Progress of Sustainability Information Disclosure Project
5th	December 2023	- Revision of CO_2 Emissions Reduction Plan - Revision of Policies - Dealing with ESG evaluation bodies
6th	March 2024	- Net Zero CO_2 Emissions Project Activities - Progress of Sustainability Information Disclosure Project - Social contribution activities - Creation of NGK Report 2024 integrated report

Communication with Stakeholders

In addition to promoting understanding regarding the NGK Group among customers, suppliers, shareholders, investors, regional communities, governments, international organizations, universities, research institutes, and employees, we are continuously improving our activities and initiatives through dialogue with all of our stakeholders.

Basic Approach

In the NGK Group Corporate Business Principles and Code of Conduct, our commitment to Disclosure of Company Information and Accountability as a part of stakeholder communication is expressed through the following.

Disclosure of Company Information and Accountability

We will promote a healthy and transparent management by active disclosure of information and discussions with stakeholders.

- We will accurately and promptly disclose information required by society.
- We will take seriously the voices of our stakeholders and fulfill our obligation of accountability. We will also build relationships of trust through continuous dialog with stakeholders.

NGK Group Corporate Business Principles and Code of Conduct ›

Stakeholder Engagement

Stakeholders	Approach	Communication (objectives)	Communication (methods)
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.	- Enhancement of customer satisfaction - Quality improvement	- Official website - Contact desk - Participation in exhibitions - Open innovation
Suppliers	With Relationship with Society, Open and Fair, and Partnership at the core of its procurement activities, the NGK Group aims for mutual prosperity based on mutual trust with suppliers through open, fair, and equitable procurement practices that not only comply with laws but also take into consideration global environmental conservation, respect for human rights, and the working environment. We also established a supplier helpline to provide unwavering support for important inquiries in an effort to build and maintain fair supplier relationships.	- Realize fair, free, and transparent transactions - Exchange information with suppliers - Establish better supply chain	- Financial results presentations - Supplier helpline - Individual visits to suppliers in Japan and overseas
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.	- Enhancement of corporate value	- General Meeting of Shareholders - Financial results briefings - Individual visits and interviews - Participation in IR events - Responding to ESG investment - Official website

Stakeholders	Approach	Communication (objectives)	Communication (methods)
Employees	We will create the following kind of work environment as the stage upon which our personnel can demonstrate the abilities they possess. - Diverse and Inclusive Workplace - Enriched and Lively Workplace - Open Workplace that encourages challenges We also support the growth of human resources and fair treatment enabling each employee to maximize their skills.	- Respect for the human rights of employees - Development of safe and comfortable workplace environments - Conducting of surveys on workplace environment and employee satisfaction - Penetration of corporate philosophy and policies	- Company newsletter - Global MIZUHO English-version company newsletter - In-house video newsletter - Intranet - Labor-Management Advisory Board meetings, regular Labor-Management Council meetings - Survey on workplace vitality - CRS (Corporate Risk Survey) - Helpline - Hotline
Local 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.	- Contribution to local communities as a trusted corporate citizen	- Collaborative activities with NPOs, etc. - Volunteer activities by employees - Social contribution activities in cooperation with labor unions - Invitation to plant tours and events

Stakeholders	Approach	Communication (objectives)	Communication (methods)
Governments and International Organizations	We proactively participate in international initiatives and other activities in order to realize mutual cooperation as key actors seeking to resolve social issues.	– Promotion of initiatives to resolve social issues	– Participation in international initiatives
Universities and Research Institutes	Through research and educational activities based on industry–academia collaboration, we have been pushing forward with the development of scientific technologies and other technologies that will contribute to resolving social issues.	– Development of scientific technologies – Development of technologies that will contribute to solving social issues	– Joint research

* Any report on potential concerns pertaining any of our business activities will be handled confidentially and will not lead to any negative consequences for anyone who wishes to make such a report.

Endorsement and Participation in Initiatives

Based on our corporate policy, NGK is striving to provide better value through our business activities to help achieve a sustainable society. We are actively involved in international initiatives to help resolve global social challenges as a responsible corporate citizen.

NGK Group Signs UN Global Compact

The NGK Group is a signatory to the United Nations Global Compact, which advocates for independent action on the part of companies, endorsed by the United Nations. We believe that addressing a broad range of social problems through our business activities, while measuring progress against indicators such as the Sustainable Development Goals (SDGs), is an important corporate social responsibility.

UN Global Compact

WE SUPPORT

UN GLOBAL COMPACT

Task Force on Climate-Related Financial Disclosures (TCFD)

In February 2020, the NGK Group announced our support for recommendations issued by the Task Force on Climate-Related Financial Disclosures (TCFD) created by the Financial Stability Board (FSB). Since then, we have evaluated how to apply the TCFD framework towards resolving issues facing NGK Group operations, such as the risks and opportunities posed by climate change, and towards necessary information disclosure.
Below, we disclose information related to scenario-specific analyses conducted based on the four themes outlined in the TCFD recommendations: governance, strategy, risk management, and metrics and targets.
We will continue to expand analysis work and enhance information disclosure as part of our commitment to communicating with our stakeholders. We will accurately identify climate change-related influences on Group operations and implement response measures to promote sustainable growth for our business.

Information Disclosure Based on TCFD Recommendations ›

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Taskforce on Nature-related Financial Disclosures (TNFD)

In January 2024, the NGK Group endorsed the efforts of the Taskforce on Nature-related Financial Disclosures (TNFD), an international initiative that strives to develop and provide a framework for disclosing nature-related financial information. We also registered as a TNFD Early Adopter. Going forward, we will promote disclosures aligned with the recommendations of the TNFD, and accelerate our efforts to protect and restore biodiversity and nature.

Information Disclosure Based on TNFD Recommendations ›

SBTi (Science Based Targets initiative)

The NGK Group has obtained certification from the international accrediting agency SBTi (Science Based Targets initiative)*1 under its Corporate Net-Zero Standard*2 for our greenhouse gas reduction targets. We are working towards a more than 90% reduction in emissions (Scope 3) by 2050 for our entire value chain compared to the base year of FY2022. As a step towards achieving this goal, we have set a target of 25% reduction in Scope 3 emissions by 2030 compared to the base year. This has allowed our goal to be certified as a Net-zero target by SBTi.

SBTi (Science Based Targets initiative)

* 1 SBTi
An international environmental initiative that encourages companies to set greenhouse gas emission reduction targets in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting the rise in average global temperatures to 1.5℃ above pre-industrial levels. It was jointly established in 2015 by four organizations: the CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF).

* 2 Corporate Net-Zero Standard
A standard for achieving the goal set by the Paris Agreement of limiting the rise in average global temperatures to 1.5℃ above pre-industrial levels. SBTi recognizes that in order to keep the rise in global average temperatures to 1.5℃, it is necessary to reduce emissions of greenhouse gases by at least 90% throughout the entire value chain by the year 2050. The initiative believes that Net zero can be achieved by removing the remaining 10% of greenhouse gases from the atmosphere using techniques such as carbon removal.

Scope 3 GHG Emissions

Environmental Data Collection

RE100

RE100 (100% Renewable Electricity) is a global initiative made up of companies that aim to use renewable energy to power all of their operations. We joined the initiative in October 2022. The NGK Group identified carbon neutrality as one of the social issues to be addressed in its mid- to long-term vision NGK Group Vision: Road to 2050. In the NGK Group Environmental Vision formulated at the same time, the Group set the target of net zero CO_2 emissions by 2050 and has been working on expanding its use of renewable energy as a strategy to achieve this target.

RE100

Other Initiatives We Participate In

Japan Climate Leaders' Partnership (JCLP)

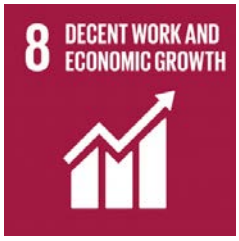
Keidanren Initiative for Biodiversity Conservation

Position on SDGs

Ever since its foundation, the NGK Group has pursued business in the energy, ecology, and electronics sectors in an effort to keep nature's air and water clean and thus help people live a comfortable, healthy life. Many of our technologies and products contribute to the SDGs, and we will continue to provide new value by leveraging our unique ceramic technologies towards the realization of a sustainable society.

Goals		Value provided by the NGK Group
1 NO POVERTY	End poverty in all its forms everywhere	– Creating appropriate employment helps to end poverty
2 ZERO HUNGER	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	– The social infrastructure created by the NGK Group's products helps secure equal access to work opportunities

Goals		Value provided by the NGK Group
	Ensure healthy lives and promote well-being for all at all ages	– Micro-lenses are increasingly used instead of mercury in UV LED light sources for applications such as the sterilization of water and air, thus contributing to reduced use of mercury – Ceramics for purifying automobile exhaust make exhaust gas clean
	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	– Creating appropriate employment gives people the chance to have equal access to education
	Achieve gender equality and empower all women and girls	– The social infrastructure created by the NGK Group's products helps provide more opportunities for women to enhance their abilities – Securing equal opportunities for women to participate and be leaders in society
	Ensure availability and sustainable management of water and sanitation for all	– Ceramic membrane filters provide highly safe water – Ceramic membrane filters purify wastewater
	Ensure access to affordable, reliable, sustainable, and modern energy for all	– Insulators are indispensable to stable power supply – NAS batteries allow stable supply of renewable energy – Ceramics for purifying automobile exhaust make exhaust gas clean, thus enabling clean usage of fossil fuels – DCB and AMB substrates support stable power supply in EVs and renewable energy applications that use power modules

Goals		Value provided by the NGK Group
	Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all	– Creating appropriate employment and providing employees with a satisfying work environment contributes to economic growth
	Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation	– Thin lithium-ion rechargeable batteries provide power for the new IoT generation – Ceramics used in electronics make ICT cheap and ubiquitous – Ceramics for semiconductor manufacturing equipment let the semiconductor industry be the foundation for modern daily life – Metal-related products are widely used in mobile phones, automobiles, industrial equipment, and other devices that undergird modern life
	Reduce inequality within and among countries	– We prevent discrimination and take prompt and appropriate action when violations occur
	Make cities and human settlements inclusive, safe, resilient, and sustainable	– NAS batteries enable innovation in urban energy management for the creation of sustainable cities
	Ensure sustainable consumption and production patterns	– We efficiently use the natural resources used to make ceramics

Goals		Value provided by the NGK Group
	Take urgent action to combat climate change and its impacts	– NAS batteries aid in the fight against climate change by allowing stable supply of renewable energy – AMB and DCB substrates support stable power supply in renewable energy applications that use power modules
	Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	– Ceramic membrane filters purify wastewater to prevent marine pollution
	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	– We protect biodiversity on land owned by the NGK Group
	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels	– We comply with the rules and regulations of the countries and regions in which we do business, and ensure respect for and strict compliance with international treaties
	Strengthen the means of implementation and revitalize the global partnership for sustainable development	– We encourage and promote effective partnerships among governments, corporations, and society as a whole

Materiality

As a corporate entity that contributes to the future of energy, protection of the global environment, and development of industries based on its unique ceramic technologies, the NGK Group identifies Materiality in order to become a company that we want to be based on the NGK Group Philosophy of "Enriching Human Life by Adding New Value to Society."

Materiality Identification Process

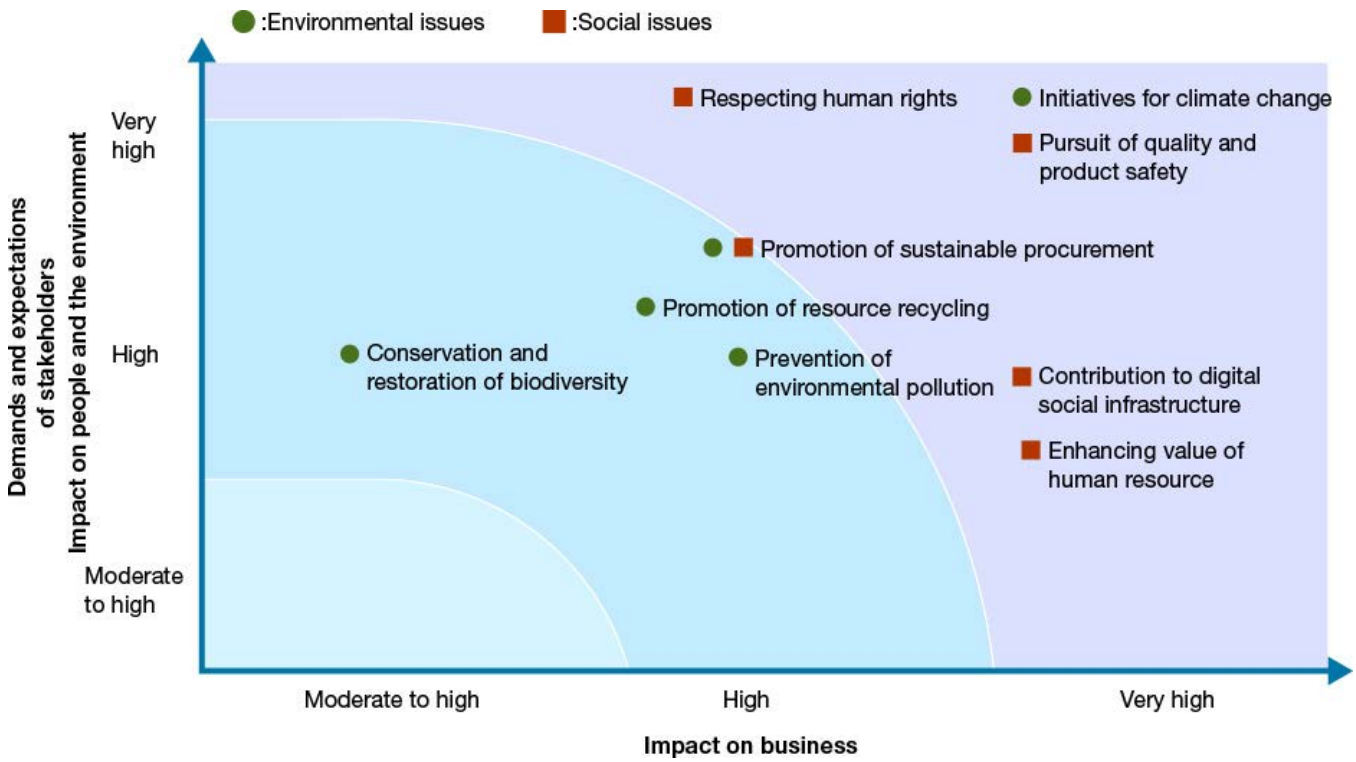
Materiality Identification Process

Step 1: Listing of issues

With reference to evaluations by ESG evaluation bodies, international frameworks and guidelines such as the GRI Standards and the SDGs, and other resources, we created a list of environmental, social, and governance issues. Of these, we listed those environmental and social issues that have a significant relevance to our Group's business, while excluding governance issues as items that should be addressed naturally as an organization.

Step 2: Evaluation of the importance of issues

We established a working group composed of representatives from different departments within the Company. The working group mapped the listed issues along two axes of "impact on business" and "demands and expectations of stakeholders/impact on people and the environment" and then conducted evaluations of the issues. (Evaluation of the latter axis included evaluation by outside experts.) Based on the evaluation results, the ESG Management Committee held deliberations and identified candidates for Materiality. For these candidates, the working group organized the risks and opportunities posed to the NGK Group, particularly those considered to possibly have a significant impact on business, and reviewed our major initiatives.



Step 3: Confirmation of validity and identification of Materiality

For all of the Materiality candidates, the working group discussed what sort of value the NGK Group wishes to bring to society by addressing the issues. To check for omissions in the scope of consideration as well as consistency with company-wide targets, the working group then laid out the relationships between the issues and our Group Vision, and prepared a draft version of the Materiality items. Based on that draft, the items were then deliberated by the ESG Management Committee in terms of their validity, after which the Board of Directors held deliberations and issued a resolution.

Materiality System

Materiality System

Materiality for Realizing the NGK Group Vision

Overall Philosophy and Materiality System

Philosophy	Vision	Materiality Items	Value/Impact on Society	Risks	Opportunities	Correlation to 5 Transformations					Main initiatives	Action Plans	KPIs	Targets	Target Achievement Periods	FY23 Results
Our Mission / Our Values	What we want to be / What we must do					ESG Management	Facilitating improvement	Common valuation	R&D	DX						
Enriching human Life by Adding New Value to Society Quality of People Embrace challenges and teamwork,Quality of Product Exceed expectations,Quality of Management Social trust is our foundation. A company to contribute to carbon neutrality and digital society with our unique ceramic technologies	Convert our business structure through 5 Transformations	Initiatives for climate change	We will promote carbon neutrality throughout our value chain and aim for business activities that achieve net zero CO_2 emissions. We will utilize data and digital technology to accelerate the development of products that contribute to the environment. We will develop and offer products and services centered on our unique ceramic technology to contribute to the realization of a carbon-neutral society by 2050.	Shrinking of internal combustion engine-related markets Effects of natural disasters on operations Geopolitical risks Increase in costs due to greenhouse gas reduction and energy conversion Damage to brand reputation	Expansion of CN-related business opportunities Reduction of costs Enhancement of our brand reputation	●	●	●	●	●	Implementing measures to mitigate global warming Assessment and disclosure of emissions Offering products/services contributing to environmental protection Risk assessment and countermeasures based on climate scenarios Utilization of sustainable financing Cooperation with external organizations	[NV1000] Development of carbon neutral-related products	Sales of newly commercialized products	100 billion yen (including digital society-related sales)	FY2030	Currently rolling out various measures, development, and capital investment
												[Environmental Vision] Implement Carbon Neutrality Strategic Roadmap	CO_2 emissions	550,000 metric tons	End of FY2025	560,000 metric tons
													CO_2 emission reduction rate relative to base year	25%	End of FY2025	24%
													Renewable electricity procurement rate	50%	End of FY2025	Stated following finalization (July)
													Energy saving rate	2%/year	End of each FY	Stated following finalization (July)
		Promotion of resource recycling	By developing and providing resource-efficient products and services through means including the sustainable use of natural resources, the recycling of wastes, and the utilization of alternative materials, we will contribute to the effective use of resources and to the promotion of resource recycling. Through the development and provision of products and services accompanied by water stress assessments at production sites and by highly efficient water use in production processes, we will also contribute to the effective use of water resources.	[Resources] Depletion of resources; price inflation Geopolitical risks Delays in responses to resource conservation and resource reuse	[Resources] Expansion of business opportunities related to resource recycling Expansion of business opportunities associated with the depletion of rare metals, etc. Utilization of ceramic raw materials Reduction of costs	●	●	●	●	●	Resources Reduction of emissions Development of resource recycling-oriented business models Recycling technology development	[Environmental Vision] Respond to circular society (respond to circular economy)	Emissions generated per unit of sales	50% reduction compared to FY2013	End of FY2025	Stated following finalization (July)
													Reduction rate of emissions compared to Business as usual (BAU)	30% reduction compared to FY2013	End of FY2025	Stated following finalization (July)
													Recycling rate (domestic)	Maintain 99% or higher	End of FY2025	Stated following finalization (July)
				[Water resource security] Damage to brand reputation Impacts on operations; increase in costs Water pollution	[Water resource security] Enhancement of brand reputation Expansion of business opportunities for water treatment-related products (membranes, etc.)	●	●	●	●	●	Water resource security Sharing of policies and fundamental stance Effective use of water resources Management of water risks Contribution through products related to the water treatment business Cooperation with external organizations	[Environmental Vision] Support a circular society (reducing water resource risks)	Water usage per unit of sales (consolidated)	Maintain FY2019 level	End of FY2025	Stated following finalization (July)
		Prevention of environmental pollution	By developing and providing pollution prevention-related products and services using our unique ceramic technologies while enforcing proper management of chemicals and pollution prevention in our manufacturing processes, we will contribute to a safe and secure society.	Compliance Handling of air, water and wastes Handling of chemical substances Impacts on local communities Shrinking of internal combustion engine-related business	Expansion of exhaust gas-related business Expansion of air and water quality-related business Expansion of nuclear power-related waste treatment business	●		●	●		Management of chemicals Handling of exhausts and water discharge Operation of environmental management system Offering products/services contributing to environmental protection Contribution to local communities	Zero legal non-compliance issues				
												· Education and confirmation of understanding	Number of training participants	Completed by all eligible participants (approximately 1,000 people)	End of FY2024	Preparing training materials (2: laws and regulations)
												· Enhance the database of registered facilities	Number of incomplete notifications	0 cases of incomplete notifications	End of FY2025	Creation of notification database
												Zero serious accidents				
												· Prevention activities (reassess equipment management issues)	Number of departments/bases currently promoting activities	All locations (33 independent, 19 domestic G companies, 20 overseas G companies)	End of FY2024	Started activities at NGK and all Group sites in Japan
												· Real-time status monitoring	Number of status monitoring points	Sites (non-consolidated: 4)	End of FY2025	1. (Chita wastewater monitoring)
		Conservation and restoration of biodiversity	With all employees maintaining a mindset of environmental conservation, we will contribute to the conservation and restoration of biodiversity through the development and provision of products that contribute to environmental protection while minimizing environmental impacts on the ecosystem in our value chain.	Damage to brand reputation Impacts on operations Impacts on supply chains, etc.	Enhancement of our brand reputation Expansion of businesses and products with consideration of ecosystems	●		●			Participation in initiatives Cooperation with suppliers Biodiversity impact assessments and response Contribution through pollution prevention products and services Volunteer activities and promotion of green spaces	[Environmental Vision] Harmony with nature	TNFD disclosure schedule (TNFD: Task Force on Nature-Related Financial Disclosures)	Disclosure based on TNFD Framework	End of Sept. 2024	Preparation for initial disclosure
		Pursuit of quality and product safety	By pursuing trusted quality from the standpoint of our customers and by stably supplying safe and reliable products and services that exceed expectations, we will contribute to the creation of a better society.	Damage to brand reputation Litigation risks	Enhancement of our brand reputation Enhancement of competitiveness Expansion of business opportunities	●	●				Quality Activity System Initiatives to improve quality of operation Quality risk reduction activities (CRE-P (Quality Risk Elimination-Process) activities) QuIC (Quality up innovation Challenge) activities Strengthening of quality management education Expanding quality assurance to service provision Ensuring the safety of products and services	Activities to increase customer trust · Improve work quality · Reduce quality risks	Number of serious product/service incidents	0 cases	End of each FY	0
		Contribution to digital social infrastructure	We will establish strong information security to fulfill our duties as a member of a cultured and safe digital society. At the same time, we will supply products based on our unique ceramic technology to make continuous contributions to global digital technology.	Damage to brand reputation Cyber attacks Information leaks Increase in the cost of security enhancement	Expansion of business opportunities related to digital society, etc. Enhancement of our brand reputation	●	●	●	●	●	Expansion of business opportunities related to digital society, etc. Sharing of policies and fundamental stance Creation of an organization and implementation for information security Creation of an organization and education for personal information protection	[NV1000] Develop digital society-related products, expand existing related products	Sales of newly commercialized products	100 billion yen (including carbon neutral-related)	FY2023	Currently rolling out various measures, development, and capital investment
												[Digital Vision] IT security	Number of serious incidents	0 cases	End of each FY	0
												Personal information protection activities	Number of serious incidents	0 cases	End of each FY	0
		Enhancing value of human resource	We will create prosperous and energetic workplace environments that take advantage of human resources with diverse experiences and perspectives. We will offer society new value by encouraging each employee to proactively take on challenges and promoting mutual growth.	Compliance Damage to brand reputation Declining competitiveness of recruitment and outflow of personnel Human resource development Rigidity of internal systems	Recruitment and retention of personnel Active participation of diverse personnel by DE&I promotion Growth through human resource development Productivity enhancement	●	●	●	●	●	Labor practices					
											· Review of personnel systems					
											· Promoting Work-life balance · Promoting labor-management initiatives	Initiatives for reducing total working hours:	Score of the survey on workplace vitality (work-life balance)*	3.5 or higher	Each FY	3.59
												Promote paid leave acquisition (zero cuts to annual leave)	Paid leave utilization rate*	100%	End of FY2026	88%
											Diversity & Inclusion					
											· Systems and initiatives to support the active participation of diverse human resources	Improving the rate of female managers	Rate of female managers	10%	End of FY2030	3.7%
												Permeate and encourage men to take childcare leave	Rate of male employees taking childcare leave	100%	End of FY2025	115%
											· Approach to local recruitment	Create a culture of utilizing diversity, including systems	Score of the survey on workplace vitality (promoting opportunities for women)*	3.5 or higher	Each FY	3.5
													Score of the survey on workplace vitality (utilization of diversity)*	3.5 or higher	Each FY	3.37
											Human resource development					
											· Human resource development for employees	Develop DX human resources	Number of data utilization personnel	1,000 or more	End of FY2030	692 people
											· Securing and maintenance of human resources	Improve employee engagement	Score of the survey on workplace vitality (career autonomy item)*	3.5 or higher	Each FY	3.66
													Score of the survey on workplace vitality (take on challenges)*	3.5 or higher	Each FY	3.3
													Score of the survey on workplace vitality (psychological safety)*	3.5 or higher	Each FY	3.73
													Score of the survey on workplace vitality (worthwhileness of work)*	3.5 or higher	Each FY	3.48
											Occupational safety and health	Safety and health activities				
											· Sharing of policies and fundamental stance	Zero legal non-compliance				
											· Promoting of safety and health activities	· Education and confirmation of understanding	Number of training participants	Completed by all eligible participants (approximately 1,000 people)	End of FY2024	Preparing training materials (2: laws and regulations)
											· External certification of our occupational safety and health management system	· Enhancement of facility notification database	Number of incomplete notifications	0 cases of incomplete notifications	End of FY2026	Sorting out notification documents
											· Safety and health education	Zero serious accidents				
												· Prevention activities	Disaster severity level	Intensity rate 0.01 or lower	End of FY2024	0.012
												· Activities to promote proactive mentality	Number of workplace discussions	All manufacturing divisions (9 nonconsolidated, 21 domestic G companies)	End of FY2024	All 9 departments at NGK and at 4 Group companies in Japan
											Health and productivity management					
											· Sharing of policies and fundamental stance					
											· Reduction of total working hours	Initiatives for reducing total working hours: Promote paid leave utilization	Paid leave utilization rate*	100%	End of FY2026	88%
											· Activities to promote mental and physical health					
											· Tier-based mental care education	Enhancing mental health care (self-care/line care)	Rate of participation in mental care education by position*	100%	End of each FY	100%
											· Promoting employee health					
											· Response to infectious diseases and other global health issues					
		Respecting human rights	We are committed to create a society that is free from violation of the human rights of all people impacted by our business activities by extending initiatives throughout our Company as well as our value chain to respect human rights.	Damage to brand reputation Impacts on business partners Operational and litigation risks Increase in costs and liabilities Recruitment and human resources Latent human rights risks and its actualization	Enhancement of brand reputation Recruitment and retention of personnel	●					Sharing of policies and fundamental stance	Conduct dialogue with internal and external stakeholders	Frequency of conducting two-way exchanges of opinions with internal and external stakeholders	Conduct each year	End of each FY	Implemented
											Performing human rights due diligence	Conduct self-checks for the company and group companies	Frequency of self-checks in compliance with RBA and other codes of conduct	Conduct each year	End of each FY	Implemented
											Human rights education	Expand employees applicable for human rights education, update content	Frequency of human rights e-learning for executives and all employees	Conduct each year	End of each FY	Implemented
		Promotion of sustainable procurement	Based on the three principles of Open and Fair, Partnership, and Relationship with Society in our basic procurement policy, we work with procurement partners that make up the supply chain to promote procurement that takes human rights, the environment, and fair business practices into account, thereby fulfilling our supply responsibilities and contributing to the happiness and sustainable development of society.	[Environment] Impacts on procurement due to increased environmental impact in the supply chain Increase in costs due to measures to reduce CO_2 emissions, etc. Demands from markets regarding waste and recycling Depletion of raw materials and rare metals [Society] Damage to our brand reputation Impacts on our business partners Impacts on procurement	[Environment] Enhancement of our brand reputation Securing of stable procurement and reduction of costs through the utilization of alternative raw materials [Society] Enhancement of our brand reputation Building of a stable supply chain	●					Sharing of policies and fundamental stance	Sharing the Supplier Code of Conduct**	Rate of consent among major suppliers	90%	End of FY2025	90% or more***
											Risk assessment and monitoring of suppliers	Supplier assessment activities	Frequency of sustainability surveys for key suppliers	Every other year	Start of FY2025 (Based on new survey method)	Implementation (using current method)
											Requests and demands toward suppliers					
											Support for suppliers' initiatives	Scope 3 reduction activities	Scope 3 emissions reduction rate (compared to 2022)	25%	FY2030	Stated following finalization (July)
											Product design envisioning sustainable procurement					

*Items implemented by NGK alone
**Scheduled to be issued in FY2024
***Percentage of consent to current Supply-Chain CSR Guideline

Overall Philosophy and Materiality System

Environmental

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NGK Group Environmental Policy / Environmental Vision

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 1996 in order to bring its corporate activities into harmony with the environment. In April 2021, the NGK Group established the NGK Group Vision: Road to 2050 along with the NGK Group Environmental Vision. The NGK Group Environmental Vision is centered on helping to achieve carbon neutrality, a recycling-oriented society, and harmony with nature. In April of the same year, we revised NGK's Core Policy on the Environment based on the NGK Group Environmental Vision, and reported this to the Board of Directors. By conducting business activities in line with the revised policy, the NGK Group works to reduce the environmental impact of business activities, and actively strives to help protect the environment by developing products and technologies to that end.

NGK Group Environmental Policy

The NGK Group will promote initiatives that serve as a framework to contribute to carbon neutrality, a recycling-oriented society, and living in harmony with nature.

NGK Group Vision ›

Environmental Policy ›

NGK Group Environmental Vision

To help realize the Sustainable Development Goals (SDGs) adopted by the United Nations, the NGK Group seeks to provide new value to society with our unique technology, thus contributing to the realization of a sustainable society and earning positive expectations and trust from society. The NGK Group Vision: Road to 2050 announced in April 2021 outlines the entity that NGK strives to become by 2050 and requires management to address Environmental, Social, Governance (ESG) issues. Based on the NGK Group Vision and to respond to such expectations and trust, in April 2021 we formulated the NGK Group Environmental Vision.

NGK Group Environmental Vision

The NGK Group will contribute to the realization of society's direction toward carbon neutrality, a recycling-oriented society, and harmony with nature through its business activities.

Toward carbon neutrality	Toward a recycling-oriented society	Toward harmony with nature
We will develop and provide products and services that contribute to the realization of a carbon-neutral society and apply them to our own business activities in order to achieve our goal of net zero CO_2 emissions by 2050.	We will contribute to the realization of a recycling-oriented society by reducing our natural resource consumption and developing and providing resource-efficient products.	We will minimize our environmental impact on ecosystems and raise stakeholder awareness through educational activities in order to achieve harmony with nature.

Carbon Neutrality Strategic Roadmap

The NGK Group has drawn up its Carbon Neutrality Strategic Roadmap comprising four strategies as a guide to realizing the goals of the NGK Group Environmental Vision.
We have established a Group-wide target of net zero CO_2 emissions by 2050, with milestone targets along the way of 550,000 metric tons by FY2025 (25% reduction compared with the FY2013 base year) and 370,000 metric tons by FY2030 (50% reduction). In the future, we will consider advancing our efforts to achieve net zero ahead of schedule by promoting the development of related technologies such as hydrogen, CCU and CCS (carbon capture, use and storage).

Four Strategies of the Carbon Neutrality Strategic Roadmap

Strategy 1: Development and provision of carbon neutrality (CN)-related products/services

In addition to our existing carbon neutrality (CN)-related products, we will also work to commercialize new products under development as well as offer society NAS battery-driven renewable energy supply business and other relevant services.

Strategy 2: Top-down enhancement of energy-saving

We will work to further enhance our existing energy conservation activities, as well as introduce high efficiency equipment and facilities and more energy-efficient operations.

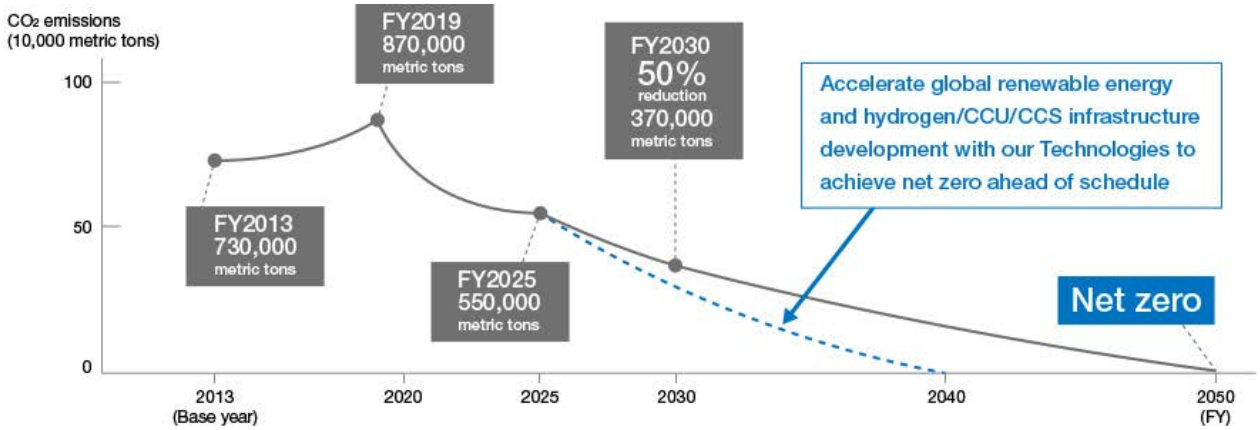
Strategy 3: Promotion of technical innovation

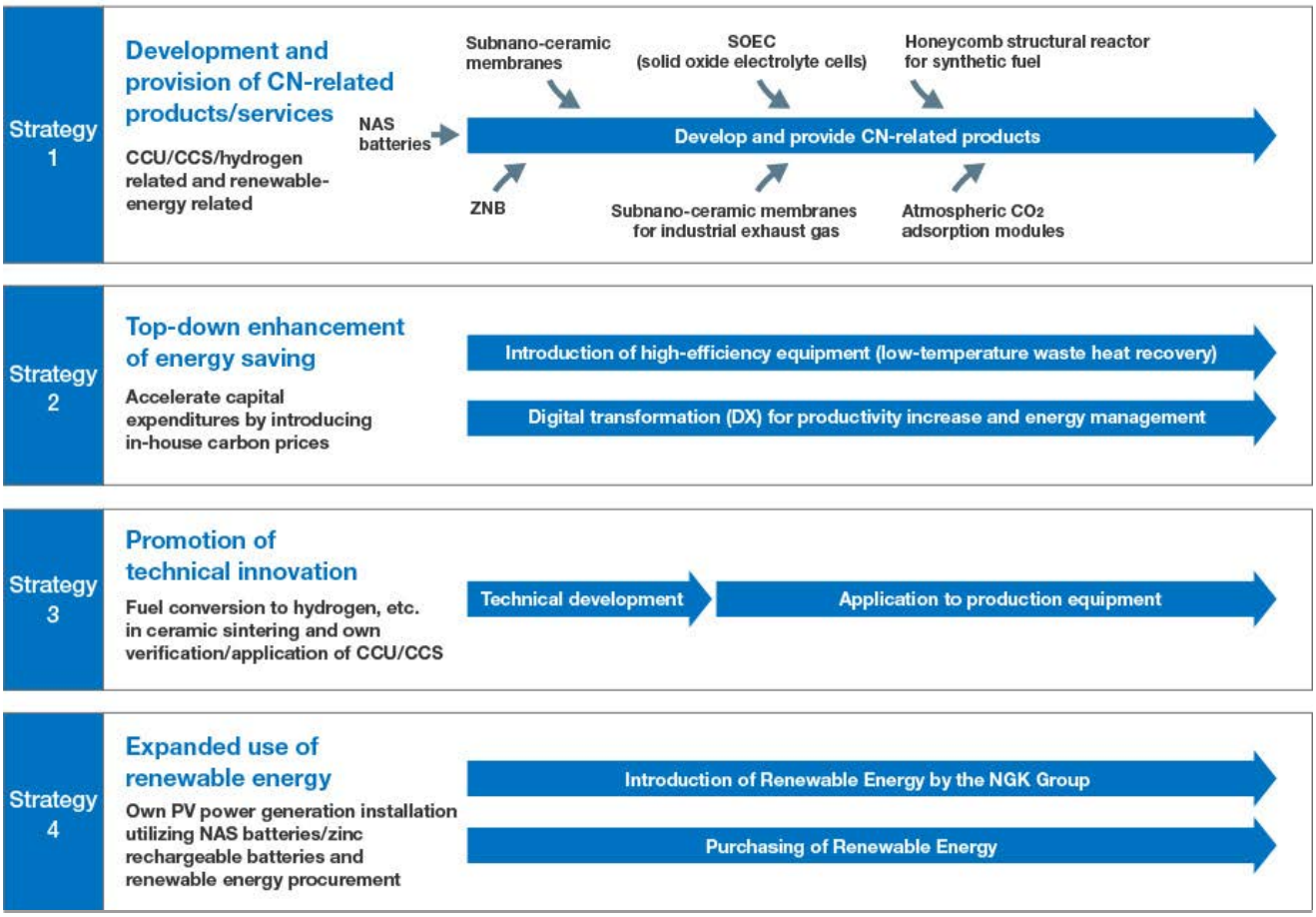
Although the ceramics firing process requires fossil fuel which is responsible for CO_2 emissions, we will work to switch over to hydrogen, ammonia and other fuels that will allow us to become fossil fuel-free.

Strategy 4: Expanded use of renewable energy

In addition to promoting various renewable energy procurement strategies both within Japan and overseas, we will install photovoltaic (PV) power generation systems at production sites within the NGK Group, and use them in conjunction with NAS batteries and zinc rechargeable batteries, to achieve demand control. We will use this as a model case in the NGK Group's renewable energy business, and work towards the goal of enabling all energy demand within the NGK Group to be met through renewable energy.

Carbon Neutrality Strategic Roadmap





5-Year Environmental Action Plan

The NGK Group formulates five-year action plans for the environment. To achieve the goals of the five-year targets, we are promoting environmental activities and setting annual targets.

Outline of the 5th 5-Year Environmental Action Plan (FY2021–2025)

In FY2021, we established the fifth 5-Year Environmental Action Plan, which encompasses our environmental action targets through FY2025.
This is the first five-year plan aimed at realizing the NGK Group Environmental Vision announced in April 2021, which targets net zero CO_2 emissions by 2050. The Environmental Vision's key themes are carbon neutrality, a recycling-oriented society, and harmony with nature.

Reference Year, Target Year, Control Scope

- Reference Year: FY2013 (for some, FY2019)
- Target Year: FY2025
- Control Scope: Consolidated (for some, Japan)

Targets of the 5th 5-Year Environmental Action Plan

The plan pursues environmental action centered on the three themes of carbon neutrality, a recycling-oriented society, and harmony with nature, all of which are aimed at realization of the NGK Group Environmental Vision.
With regard to initiatives toward carbon neutrality, the KPI used for CO_2 has been changed from CO_2 emissions generated per unit of sales to CO_2 emissions volume. The intent of this change is to link the KPI to our NGK Group Environmental Vision target, and make it easier to gauge our progress towards our milestone target of a 50% reduction (370,000* metric tons) in CO_2 emissions by FY2030 compared with the reference year of FY2013 and net zero CO_2 emissions by 2050. Also, in order to facilitate action aimed at expanding the use of renewable energy, we have established a target for the rate of renewable energy to total energy usage for the entire Group. Achieving this target will not only

bring the NGK Group closer to achieving net zero carbon emissions but also help promote more widespread adoption of renewable energy in society.
In terms of recycling of resources, similar to the Fourth 5-Year Plan, we have set targets for continuous improvement using the reduction of waste generated per unit of sales, reduction rate against business as usual (BAU), and the recycling rate as management indicators.
Further, along with climate change, we also recognize that water resources represent an area of significant environmental concern, and it has been our ongoing practice to evaluate water resource risks and take appropriate action in response. Under the current plan, we have changed to quantitative indicators from qualitative indicators that will help us take more substantive action in addressing these risks.
From the perspective of connecting with society, we are focused on contributions to environmental society and promotion of environmental communication. In terms of contributions to environmental society, we have traditionally used the growth rate in sales of products contributing to environmental protection as a target; however, in order to bring this more in line with the NGK Group Environmental Vision, we have set a target to increase the number of carbon-neutrality-related products and services registered. With regard to CSR procurement, we are seeking to assess environmental data from our suppliers, including CO_2 emissions.

* The calculation standards for emissions have been revised to match the market standards stipulated by the GHG Protocol. Specifically, the power emission factor (coefficient for converting power consumption into CO_2) has been changed from the conventional fixed value to the actual value of the power company every year. This will reflect the renewable energy utilization rate.

Results of the 5th 5-Year Environmental Action Plan in FY2023

Below are the targets and results for FY2023, targets for FY2024, and targets for the final year of the current five-year action plan, in FY2025.
With the gradual recovery of global economic activity in FY2023, strong global passenger car sales led to an increase in the volume of shipments for automotive-related products for our Environment Business Group. On the other hand, through our pursuit of energy conservation and expanded efforts to increase renewable energy use, we reduced CO_2 emissions by approximately 200,000 metric tons.
As a result, we achieved CO_2 emissions of 560,000 metric tons against the target of 560,000 metric tons, as well as 25% of the target for rate of renewable energy use. We have also reached all other quantitative targets, including for waste and water withdrawal.

Results in FY2023 were as follows.

Results of the 5th 5-Year Environmental Action Plan in FY2023

Category	Item	KPI	FY2023			FY2024 Target	FY2025 Target	Related SDGs
			Target	Result	Self- evaluation*1			
Initiatives toward carbon neutrality	Reduce CO_2 emitted by manufacturing activities	CO_2 emissions (consolidated)	560,000 metric tons (Reduced by 23% from FY2013)	560,000 metric tons (Reduced by 23% from FY2013)	○	600,000 metric tons (Reduce by 18% from FY2013)	550,000 metric tons (Reduce by 25% from FY2013)	
		Rate of renewable energy usage (consolidated)*2	25%	27%	○	25%	50%	
	Reduce CO_2 emissions across value chain	Plan progress	• Scope 3 consolidated disclosure • Expand scope of LCA calculation	• Scope 3: SBT Plan •LCA: 2 products completed	○	• SBT certification • Expand LCA to divisions	• Expand scope of Scope 3 calculation • Life-cycle assessment (LCA) of major products	
Initiatives for a recycling- oriented society	Reduce waste*3 associated with production activities	Waste*3: Waste generated per unit of sales (consolidated)	Reduce by 53% from FY2013	Reduced by 53% from FY2013	○	Reduce by 50% from FY2013	Reduce by 50% from FY2013	
		Reduction rate against BAU*4 for volume of waste*3 (consolidated)	Reduce by 27% from FY2013	Reduced by 31% from FY2013	○	Reduce by 30% from FY2013	Reduce by 30% from FY2013	
	Promote resource recycling	Recycling rate (Japan)	At least 99%	99.5%	○	At least 99%	Maintain at least 99%	
	Manage and respond to water resource risks	Water withdrawal per unit of sales (consolidated)	FY2019 level	Maintained FY2019 level	○	FY2019 level	Maintain FY2019 levels	
Initiatives toward harmony with nature	Promote biodiversity conservation	Plan progress	Research on Japan and overseas trends	Considered roadmap Started TNFD	○	TNFD disclosure	Expand and enhance actions aimed at Post-2020 Global Biodiversity Framework targets	
Contributions to environmental society	Develop and distribute products/ services contributing to environmental protection	Number of registered products	Increase number of registered products	One additional (AMB substrates)	○	Increase registered products	Increase number of CN-related products/ services registered	
	Promote CSR procurement	Plan progress	Expand visits to suppliers Expand SAQ overseas	Surveyed suppliers	○	Review SAQ*5 based on the Supplier Code of Conduct	Ascertain environmental data of suppliers	
Promotion of environmental communication	Contribute to local communities	Plan progress	Collaboration with EPOC and Aichi Mirai Forum	EPOC seminar planning	○	Collaboration with EPOC	Continually enhance actions partnering with local communities	
	Increase environmental awareness	Plan progress	Education on resource recycling and coexistence with nature	Published ESG features and serialized articles in the company newsletter Mizuho	○	Training about resource recycling and harmony with nature	Continually enhance environmental training and information disclosure	

*1 Self-evaluation standards for achievement level of fiscal year target: ○: Target achieved; ×: Target not achieved
*2 Ratio of electricity from renewable energy to total electricity consumption
*3 Substances, including valuable substances, other than products that are discharged from business sites
*4 Reduction rate compared to business as usual (the amount of waste generated if no improvements were made)
*5 Self-Assessment Questionnaire concerning corporate social responsibility

Results of the 5th 5-Year Environmental Action Plan in FY2023

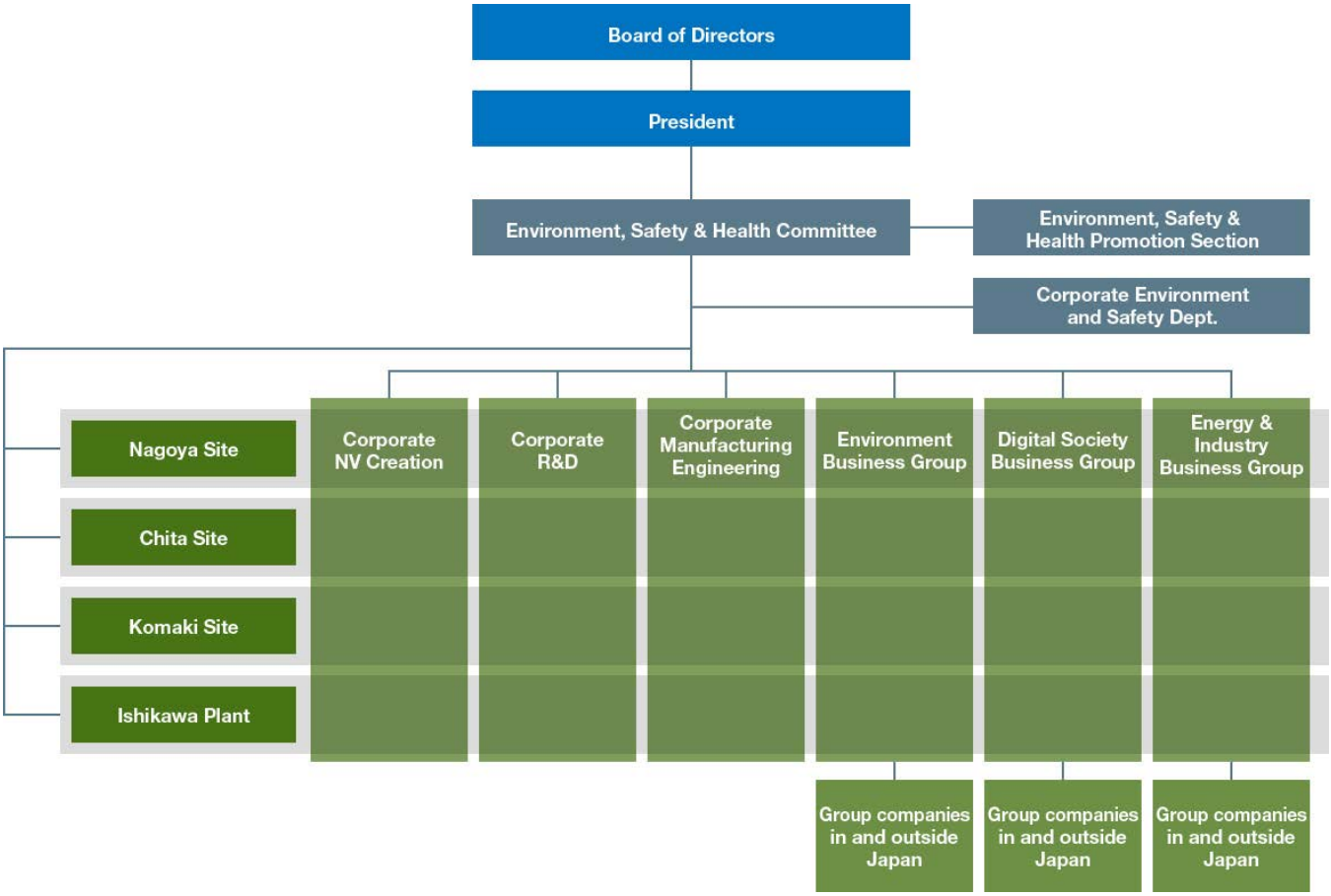
Environmental Management System

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

Promotion System

In addition to NGK's environmental management systems at each site of Nagoya (headquarters, Atsuta/Mizuho), Chita, Komaki, and the Ishikawa Plant, we are promoting environmental management under the leadership of each business group to control environmental activities at all Group companies in and outside Japan. The decisions of the Environment, Safety and Health Committee are shared across the entire Group via the business groups so they can be incorporated into the business activities of each Group company. Annual liaison meetings are held for Group companies in Japan to promote unified environmental management for the entire Group. Meanwhile, personnel and business groups at headquarters cooperate to audit Group companies inside and outside Japan on a regular basis. Thus, we create interactive discussion and support opportunities to address issues facing each company.

Environmental Management Promotion System Diagram



Environment, Safety & Health Committee

This committee is led by the chair and meets twice each year. Other meetings are held at the discretion of the chair.

Governing Structure

Chair	President appoints the chair in light of Executive Committee deliberations
Vice Chair	Appointed by Committee Chair In principle, this is the General Manager of the Safety, Quality Assurance & Environment Div.
Members	Executive Vice President; Administrators; staff with jurisdiction; and personnel in-charge*; Group Executives; General Managers; Director of each site (General Manager of Pollution Control; General Safety and Health Manager); General Manager of Safety, Quality Assurance & Environment Div.; General Manager of Corporate Communications; General Manager of Corporate Planning Office; General Manager of Human Resources Dept.; General Manager of Group Compliance Dept.; General Manager of Finance & Accounting Dept.; General Manager of Legal Dept.; General Manager of General Affairs Dept.; General Manager of Construction & Maintenance Dept.; General Manager of Global Engineering Center; others designated by the Committee Chair

* When the head of the affiliated department is a committee member

Environment, Safety & Health Promotion Section

Governing Structure

Committee Chair	General Manager of Safety, Quality Assurance & Environment Div.
Vice Chair	General Manager of Environment Business Group Safety, Quality & Environment Dept.; General Manager of Digital Society Business Group Safety, Quality & Environment Dept.; General Manager of Energy & Industry Business Group Safety, Quality & Environment Dept.; General Manager of Planning Dept., Corporate R&D; General Manager of M&E Planning Dept., Corporate Manufacturing Engineering, General Manager of Planning Dept., Corporate NV Creation; others designated by the Committee Chair

Environmental Committees at Each NGK Site

In principle, committees of each NGK site (Nagoya Site [headquarters, Atsuta/Mizuho], Chita Site, Komaki Site, Ishikawa Plant) meet twice per year in each area. They thoroughly convey matters determined by the Environment, Safety & Health Committee, and communicate and discuss issues and topics in each area.

Environmental Management at Group Companies in and outside Japan

Business groups of NGK, including those at Group companies in and outside Japan, have environmental management systems aimed at realizing NGK Group Environmental Policy. NGK surveys environmental performance at Group companies and conducts audits to monitor their conformance to environmental laws and regulations. If problems are discovered, the causes and remedies are determined and disseminated throughout the NGK Group. Moreover, at Group companies in Japan involved in manufacturing, annual liaison meetings are held in order to convey action policies and to share information on matters such as companies' environmental management status and effective environmental initiatives.

Strengthening Global Environmental Management

The NGK Group promotes corporate activities that are in harmony with the environment. We are also building and implementing an environmental management system from a global perspective in order to actively fulfill our responsibility to address various societal challenges. As we continue our efforts aimed at lessening the environmental impact of our business activities, we are also preparing a system for complying with environmental laws and regulations, and increasing our level of global environmental management.

Efforts to Mitigate Environmental Risks Throughout the Group

All NGK Group manufacturing bases in and outside Japan have completed acquisition of ISO 14001 or third-party certifications meeting this standard, and are implementing environmental management in accordance with our environmental management system. NGK also shares information regarding changes in domestic environmental laws and regulations with Group companies in Japan and has created and implemented a structure to ascertain the status of responses to these changes. 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 overseas Group companies are located.
In order to lessen the risk of environmental accidents and compliance violations, we are also promoting a shift from reactive response and recurrence prevention to preventive activities. As a measure for preventing incidents such as exceeding standards or failure to implement measures against accidents, we have re-inspected things that are thought to pose a high environmental risk including handling of hazardous substances, registered equipment related to water quality, and the like. We have re-inspected approximately 240 pieces of equipment to start with, and are taking corrective measures to address defects.

Acquisition of Environmental Management System Certification

The NGK Group encourages the acquisition of ISO 14001 or third-party certifications (such as Eco Stage 2 or Eco Action 21 in Japan) that meet this standard to systematically and continuously develop its environmental conservation activities in line with NGK Group Environmental Policy.
Under this initiative, all Group companies, including those outside Japan, as well as the Nagoya, Chita, Komaki sites and Ishikawa plant, have received third party certification of their environmental management systems.

Environmental Management System Certification Status

As of May 2024

Category		Number of manufacturing sites	Number of sites certified
NGK		4	4
Group companies in Japan	Environment Business Group	1	1
	Digital Society Business Group	9	9
	Energy & Industry Business Group	9	9
Group companies outside Japan	Environment Business Group	10	10
	Digital Society Business Group	4	4
	Energy & Industry Business Group	7	7

* New production sites operating for less than two years are not covered

Environmental Audits

Every year, NGK conducts internal audits and external audits (surveillance audits and review audits) of the environmental management system at all Group sites in Japan and overseas, including Nagoya, Chita, Komaki, and Ishikawa.
In FY2023, there were no significant findings. In the event of a significant finding, the relevant department and Environment, Safety & Health Dept. work together to review and implement countermeasures, as well as inform the Environment, Safety & Health Committee in each area in an attempt to horizontally deploy these measures.

Significant Findings

Environmental Data Collection

Environmental Risk Management

At the NGK Group, each manufacturing site has individually established environmental management systems, and strives to preserve the environment and reduce environmental risks. The business group which oversees Group companies joins together with the Environmental Management Department at NGK headquarters to conduct yearly environmental audits of Group company manufacturing sites and help improve the level of environmental management of the NGK Group as a whole.

Regulatory Compliance

NGK conducts monitoring and assessments as well as vigorous control of exhaust and wastewater produced from its sites, observing relevant regulations and environmental preservation-related and other agreements with control authorities.
Additionally, we organize environmental management specialist seminars on a regular basis for all Group companies in Japan to keep responsible persons updated on related topics, thereby enhancing our capabilities to prevent environmental pollution. In FY2023, we incurred fines for legal violations due to the improper disposal of waste at Group companies outside of Japan, and the discharge of oil-laden water from storm sewer pipes into rivers. On top of implementing measures to prevent recurrence, we will promote their deployment laterally across the Group by disseminating information through the Environment, Safety & Health Committee.

Major Violations

Environmental Data Collection

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 FY2023, environmental patrols were conducted at the Nagoya, Chita, and Komaki sites and the Ishikawa Plant to prevent atmospheric 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.

Activities Conducted in FY2023

		Air	Water	Noise/ Vibration	Chemical substances
Environmental patrols	Nagoya	4	1	4	2
Emergency response drills		4	2	-	2
Environmental patrols	Chita	1	1	1	1
Emergency response drills		6	4	-	-
Environmental patrols	Komaki	1	3	1	1
Emergency response drills		9	14	-	-
Environmental patrols	Ishikawa	2	2	2	2
Emergency response drills		6	2	-	2

Note: "-" indicates emergency response drills were considered of low importance and not conducted.

Environmental Education and Communication

Participating in Local Environmental Education

In the NGK Group Environmental Policy, we have established priority initiatives for education and public relations activities, and conduct ongoing environmental education and awareness 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 conduct environmental events and provide information to a wide range of stakeholders, including lectures at high schools and universities, to increase environmental awareness.

Offering Guest Lectures at Nearby High Schools

At the request of Ai Chi Mirai Forum, an NPO that provides opportunities to learn about global problems such as environmental pollution, poverty, and war, NGK employees regularly visit schools in Aichi Prefecture to give lectures. In such classes, we introduce corporate initiatives and SDGs (Sustainable Development Goals), and give students an opportunity to think about themselves and the environment.

University Lectures

The Business Ethics Research Center (BERC) is a general incorporated association that supports the research and adoption of a wide array of business ethics. As part of its activities in FY2023, NGK employees served as endowed BERC lecturers and visited universities to deliver lectures. These lectures introduced NGKs philosophy, corporate strategy, and efforts towards carbon neutrality to students.

Sharing Information with Other Companies

The EPOC (Environmental Partnership Organizing Club) * subcommittee led by NGK holds seminars and field trips several times a year on themes related to corporate environmental management (such as low carbon, resource recycling, biodiversity, water resources, and laws and regulations relating to the environment), and disseminates information to its members. In FY2023 we held 3 seminars and 1 study session.

* The EPOC: A voluntary organization consisting mainly of companies in the Chubu region of Japan, which was established in 2000. Its purpose is to spread information regarding the environment with the aim of building a recycling–oriented sustainable society. NGK has been involved in the planning and management of this organization since its establishment. EPOC currently has approximately 253 members. (As of May 10, 2024)

Employee Environmental Training and Skills Development

Environmental Expert Training

In FY2021, to strengthen compliance, we created training materials which could be accessed on-demand. We created five training materials covering topics such as the Air Pollution Control Act and Water Pollution Prevention Act, and around 6,200 people have attended lectures since they began in October 2022.
We have also rolled out these contents to our group companies in Japan, and around 2,000 people have utilized them.

Special Environmental Training

Every year, we invite outside experts to introduce our employees to examples of corporate initiatives which address carbon neutrality, resource recycling, and living in harmony with nature.

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. We provide support in each department for the acquisition of environment-related legal qualifications targeting managers engaged in pollution prevention required for the management of each site.
We systematically educate Qualified Energy Managers in the Engineering Department, and Special Controlled Industrial Waste Managers and others involved in waste-related activities in the Environmental Management Department and other business groups.

Qualifications Acquired as of March 31, 2024 (NGK)

Pollution Control Managers			Qualified Energy Managers	Special Controlled Industrial Waste Managers	Waste Disposal Facility Technical Managers
Air	Water	Noise/ Vibration			
111	126	35	41	28	14

Support for Acquisition of Eco Test Certification

With the aim of ensuring that each employee acquires a strong environmental awareness and a wide range of knowledge with respect to the environment, NGK supports employees in sitting the Eco Test* by lending them reference materials and subsidizing test-related expenses.
To date, a total of 898 people—approx. 20% of all NGK employees—have 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.

Eco Test Certification

Environmental Data Collection

NGK Eco Point System

NGK promotes its Eco Point System in an effort to contribute to regional environmental improvement. Employees earn points for environmental behavior conducted at work and in the home, a portion of which is converted into cash and donated to local government-managed funds (environmental funds).
In addition to NGK's three sites in Nagoya, Komaki and Chita, and the Ishikawa Plant, the system was introduced to the Tokyo Main Office and Osaka Branch and sales offices in FY2016.

Donation of NGK Eco Points

The NGK Eco Points earned by individual employees through their engagement in environmental activities are aggregated on an annual basis for each site (Nagoya, Chita, Komaki) and plant (Ishikawa, NGK Ceramic Device), and top scorers are commended every year. For earned points, employees select from two options: exchange for eco goods or donate to local funds. The number of employees choosing donation is growing every year, indicating increasing environmental awareness.

Mayor of Handa-city in Aichi Prefecture with NGK employees

Information Disclosure Based on TCFD Recommendations

In February 2020, the NGK Group announced our support for recommendations issued by the Task Force on Climate-Related Financial Disclosures (TCFD) created by the Financial Stability Board (FSB). Since then, we have evaluated how to apply the TCFD framework towards resolving issues facing our Group operations, such as the risks and opportunities posed by climate change, and towards necessary information disclosure.
Below, we disclose information related to scenario-specific analyses conducted based on the four themes outlined in the TCFD recommendations: governance, strategy, risk management, and metrics and targets.
We will continue to expand analysis work and enhance information disclosure as part of our commitment to communicating with our stakeholders. We will accurately identify climate change-related influences on Group operations and implement response measures to promote sustainable growth for our business.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

The Task Force on Climate-Related Financial Disclosures (TCFD) was established by the Financial Stability Board (FSB). Many Japanese companies chose the G20 Osaka Summit in June 2016 as an opportunity to express support for the task force (1,470 companies and organizations as of October 12, 2023).

Governance

In April 2021, we announced the NGK Group Vision: Road to 2050. In this Group Vision, we position responding to ESG issues as a core management theme and outline the goal of being a company that contributes to carbon neutrality and the digital society using our ceramic technologies. Recognizing climate change response as one of the highest-priority issues to achieving sustainability for our planet, we drafted the NGK Group Environmental Vision as an extension of the NGK Group Vision. In this Environmental Vision and our Carbon Neutrality Strategic Roadmap, we outline achieving net zero CO_2 emissions for our business activities by 2050. Specific activities include setting management metrics and goals for each fiscal year of our 5-Year Environmental Action Plan. Our ESG Management Committee chaired by the President deliberates on these metrics and goals at least once a year, and issues reports to our Board of Directors. We also have incentivized CO_2 emissions reduction by adding achievement benchmarks to the performance-linked bonus evaluation criteria for directors and executive officers. Members from relevant divisions participate in Environment Action Subcommittee within the ESG Management Committee to evaluate measures for information disclosure based on TCFD recommendations. The subcommittee's results are then deliberated by the ESG Management Committee

before being reported to the Board of Directors. This subcommittee is also focused on achieving carbon neutral business activities by no later than 2050, one of the goals outlined in our Action Plan. The subcommittee works towards this goal by also promoting measures such as energy saving and furnace fuel conversion from fossil fuels to carbon-free fuel. The ESG Management Committee submits reports on its deliberations, including ESG issues such as our disclosure response for the CDP, to the Board of Directors (at least once per year).

NGK Group Vision ›

NGK Group Environmental Vision ›

Framework Related to Climate Change Response

Risk Management

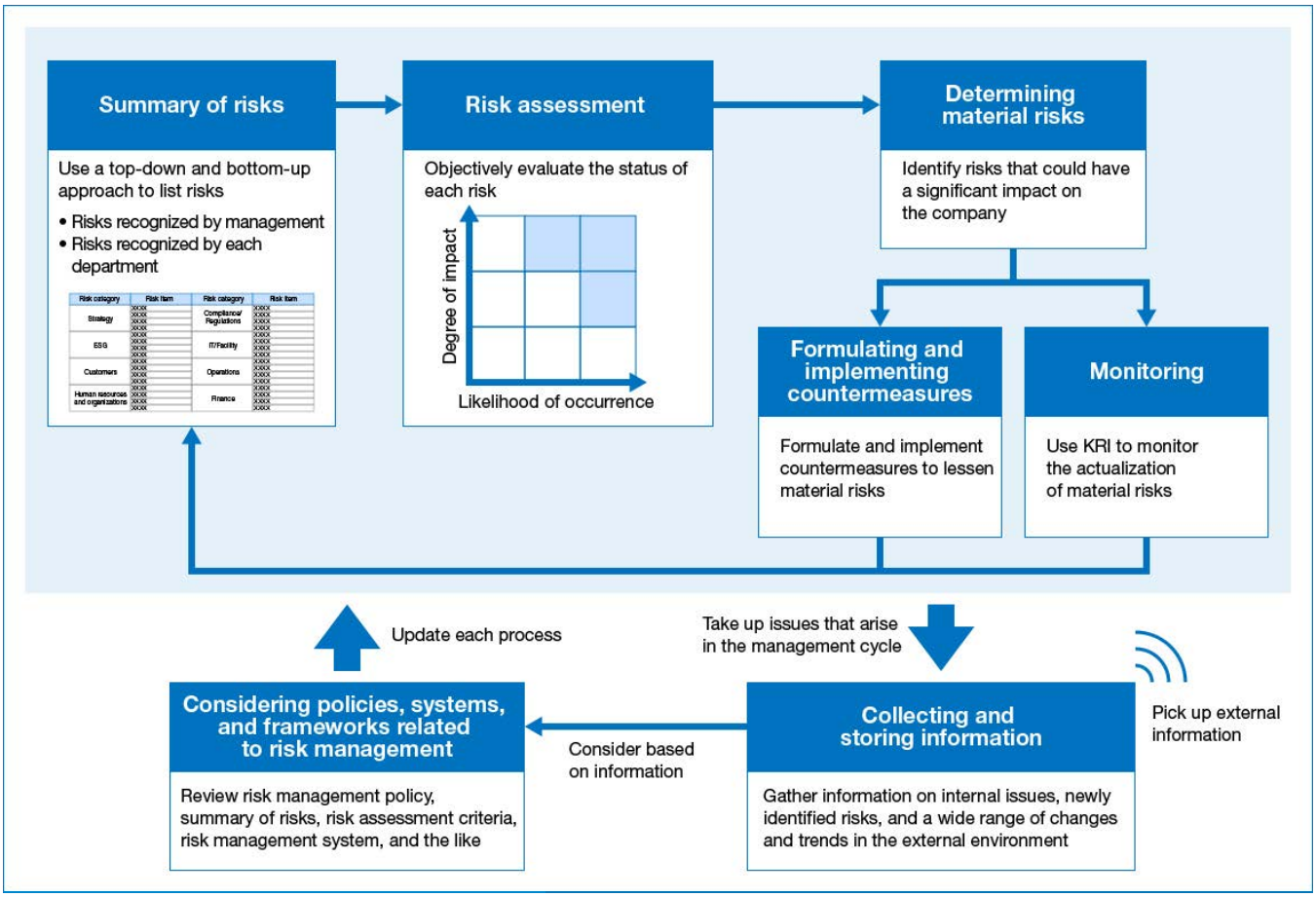
The Risk Management Committee handles NGK Group-wide risks, including risks related to climate change, by establishing policies, strategies, frameworks, measures, and annual plans for risk management. It also monitors the overall execution status of risk management and reports to the Board of Directors when appropriate. In addition, individual risk items are the responsibility of the head of the department or committee that should manage and monitor them, and are handled by the relevant department or committee. In the event that disasters or accidents actually do occur, they are handled according to the Basic Rules of Crisis Management, by the department or committee specified by these rules. In cases of particularly serious risks, the Executive Officer in charge of the Corporate Planning Office may decide to convene a response committee, which includes participation by the President, to address said risks.

Risk Management Framework

Risk Management Process

In addition, for risks related to climate change, the Environment Action Subcommittee within the ESG Management Committee creates scenarios and conducts a scenario analysis to identify Materiality risks. Through this process, we extract risks and opportunities, and draft response strategies. These results are deliberated by the ESG Management Committee, then reported to the Board of Directors.

Materiality Risk Management Cycle



Strategy

Climate Change Risks and Opportunities

We have set time frames and scenarios to analyze the risks, opportunities, and magnitudes of the impact of climate change in relation to NGK Group business.
Scenario analysis is a method for postulating multiple future scenarios and ascertaining the impacts of the risks and opportunities posed by climate change on the NGK Group. The goal is to use the insights gained in considering future strategies and responses.

Assumptions

Timeframes

We set short-term, medium-term, and long-term timeframes for considering risks and opportunities.

Timeframe		Reason for setting
Short-term	FY2025	Final fiscal year of the fifth 5-Year Environmental Action Plan
Medium-term	FY2030	Interim goal year of the NGK Group Environmental Vision
Long-term	FY2050	Goal year of the NGK Group Vision and the NGK Group Environmental Vision

Scenarios

We have set 1.5℃ and 4℃ scenarios under which the risks and opportunities of transitioning to carbon neutrality, and the physical risks and opportunities of climate change, are each maximized.

Scenarios	Summary	Main external scenarios used as reference
1.5℃ Scenarios	Rapid changes in policy, regulatory systems, and markets to aim for carbon neutrality by 2050 and limit the average global temperature increase to 1.5℃ compared to pre-industrial revolution temperatures.	- International Energy Association (IEA) Net Zero by 2050 scenario - SSP1-2.6 scenario, etc.
4℃ Scenarios	Lack of progress in government policy, regulatory systems, or social initiatives result in an average global temperature increase of 4℃ compared to pre-industrial revolution temperatures. Massive impact from disasters and other events caused by climate change.	- SSP5-8.5 scenario, etc.

Particularly Important Risks and Opportunities

We have identified risks and opportunities in line with the TCFD categories for each time frame and scenario. We conducted qualitative assessment of the magnitude of financial impact of each risk and opportunity with reference to the risk assessment criteria of all Group companies. We also quantified the financial impacts for some items that were thought to have a certain impact and could be quantitatively assessed based on these scenarios. Furthermore, this scenario analysis is not a forecast of NGK Group performance, but rather analyzes the impacts of the risks and opportunities posed by climate change on the NGK Group under each scenario. It is intended to be used in considering strategies and responses from here on out. The information used to calculate these financial impacts is the information available at the time of the examination, and contains uncertainties and assumptions.

(1) Carbon Neutral Society Transition Risks and Opportunities (1.5°C scenario)

Category	Summary of assumed scenario	Business risks & opportunities		Details of risks & opportunities	Timeframe	Response strategy	Financial impacts
Policy/ Legal	• Rapid reduction in emissions required to achieve carbon neutral by 2050. • Adoption of carbon pricing against CO_2 emissions of our company or our supply chain. 2030: 130$/t- CO_2 2050: 250$/t- CO_2	Increased cost of responses to further reduce greenhouse gas emissions	Risks	Incurring response costs related to equipment replacement and upgrades for energy saving, renewable energy procurement, electrification of energy sources, and energy conversion from natural gas as a furnace fuel to fuels sources such as hydrogen or ammonia.	Short- to long-term	• Trend and prediction monitoring for the regulations and carbon pricing systems of various countries • Promote enhanced energy saving, technological innovation, and initiatives towards expanding the use of renewable energy in line with the NGK Group Environmental Vision and Carbon Neutrality Strategic Roadmap • Monitor supply status of fuels with low greenhouse gas emissions • Promote greenhouse gas emissions reductions in accordance with Supply-Chain CSR Guideline • Expand Scope 3 calculations and range of disclosure, conduct life cycle assessments (LCA) for major products to identify reduction targets	Financial impacts of energy conversion/carbon pricing (increased expense)*1 2025: - ¥2.0 bil 2030: - ¥5.8 bil 2050: - ¥12.3 bil (Reference: Impacts of carbon pricing without reductions: - ¥5.9 bil to - ¥17.7 bil)
		Increased costs due to adoption of carbon pricing	Risks	Costs increase due to adoption of carbon pricing on company emissions and emissions along the upstream of our supply chain			
Technology	Growing battery demand leading to decline in prices for rechargeable lithium-ion and other batteries. Also seeing the emergence and adoption of new battery technology with high added value.	Risks and opportunities associated with battery technology innovation and the emergence /adoption of new technology	Opportunities	• Increased competitiveness by advancing proprietary technology development • Increased storage battery needs	Medium- to long-term	• Monitoring of trends in technology innovation • R&D advancement	We are currently carrying out qualitative studies due to the lack of quantitative indicators.
			Risks	Competitiveness of our technologies will decline as competitors advance proprietary technology development			
	Rapid growth in CO_2 capture volume in various sectors, including fuel production, power generation, and industry.	Market growth driven by widespread adoption of CCU/CCS (CO_2 capture, utilization, and storage)	Opportunities	Growth in CCU/CCS market will increase business opportunities for our ceramic products (subnano-ceramic membranes, etc.)	Medium- to long-term	• Monitoring of technology innovation and market trends • Business expansion in the CCU/CCS market, new product development promotion marketing, business schemes, promotion of New Value 1000 to accelerate new product development • Research, development, and provision of subnano-ceramic membranes, solid oxide electrolysis cells (SOEC), and the establishment of carbon cycles to use them.	Financial impacts of CCUS-related products*2 2025: + ¥0 bil 2030: + ¥14 bil 2050: + ¥270 bil
Market	• In the short-term, vehicle emissions restrictions will be stricter, increasing demand for improved fuel economy. • In the medium- to long term, the proportion of electric vehicles (EVs) and fuel cell vehicles (FCVs) in automobile sales will rise rapidly, and the proportion of internal combustion engine vehicles will decline.	Changes in demand for automotive parts	Opportunities	• In the short term, demand for catalyst substrates for controlling automotive emissions and NOx sensors will increase due to stricter exhaust gas regulations. • In the medium- to long-term, demand for gallium nitride (GaN) wafers, DCB and AMB substrates, and beryllium copper alloy for EVs will increase.	Short- to long-term	• Monitoring of regulatory, market, and demand trends • Plan and implement production and capital expenditures in response to the plans of automobile manufacturers • Cover decline in demand for internal combustion engine vehicles due to tougher exhaust gas regulations by increasing the number of new products and high-performance products • Expand adoption of gallium nitride (GaN) wafers, beryllium copper alloy, and DCB and AMB substrates for EVs and plug-in hybrid vehicles (PHEVs) • Develop and offer products for heat management in EVs, new products for synthetic fuels, etc.	Financial impacts of automotive-related products*2 2025: + ¥65 bil 2030: - ¥50 bil 2050: - ¥244 bil
			Risks	Demand for products for internal combustion engine vehicles will decline over the medium- to long-term			
	The capacity of power storage batteries and demand for lithium-ion rechargeable batteries for EVs will rapidly expand.	Increased storage battery demand	Opportunities	• Increased demand for NAS batteries and Zinc Rechargeable Batteries • Increased business opportunities in the heating and refractory business for lithium-ion rechargeable batteries	Short- to long-term	• Monitoring of power policies and customer trends in each country • Enhance production systems in response to growing demand • Provide new value through solutions services • Commercialize Zinc Rechargeable Batteries	Financial impacts of battery-related products*2 2025: + ¥23 bil 2030: + ¥33 bil 2050: + ¥68 bil
	Demand for semiconductors will increase with electrification in various fields such as industry and transportation.	Growth in demand for semiconductor-related products	Opportunities	Increased demand for parts for semiconductor manufacturing equipment and electronic parts / metals in the digital society business	Short- to long-term	• Monitoring of demand trends • Enhance production systems in response to growing demand • Partner with semiconductor manufacturing equipment manufacturers, increase facility capacity, personnel, facility systems, etc. as necessary	We are currently carrying out qualitative studies due to the lack of quantitative indicators.
Reputation	• Regular and growing trend of investors and financial institutions factoring climate change risk into investment decisions and requiring lenders to set SBT*3. • Customers are increasingly demanding renewable energy adoption and reductions in CO_2 emissions.	Improving assessments by contributing to carbon neutrality	Opportunities	Assessments by stakeholders can be improved by proactively responding to climate change and providing products and services that contribute to carbon neutrality.	Short- to long-term	• Business structure conversion, one of the goals outlined in the NGK Group Vision • Promote measures to reduce greenhouse gas emissions • Conduct information disclosure in line with the TCFD framework • Ascertain customer demands and implement responses accordingly	We are currently carrying out qualitative studies due to the lack of quantitative indicators.
		Decline in trust from stakeholders due to delays in responding to climate change	Risks	Delays in climate change measures will have a negative impact on brand, capital procurement, transactions, etc.			

*1 We set certain assumptions and premises about things like future business expansion based on the parameters (carbon price, energy unit price, power source mix, etc.) of scenarios in the International Energy Agency (IEA) "Net Zero by 2050" report (2021 edition). Then we combined the costs of energy conversion and energy saving with carbon prices for greenhouse gases to calculate the amount of financial impact on profits.

*2 We used certain assumptions and premises to estimate our market share based on changes in the automobile, CCU/CCS, and battery markets according to scenarios in the International Energy Agency (IEA) "Net Zero by 2050" report (2021 edition). Then estimated the impact on sales of some products compared to the present to determine financial impacts.

*3 SBT: Abbreviation of Science-based Targets, which is an initiative that requires companies to set targets for reducing greenhouse gas emissions based on scientific evidence.

(2) Physical Risks and Opportunities Associated with Advancing Climate Change (mainly 4°C scenario)

Category	Summary of assumed scenario	Business risks & opportunities		Details of risks & opportunities	Timeframe	Response strategy	Financial impacts
Acute	• Frequency of flooding increasing in regions such as Japan and Asia. • The frequency of violent typhoons increasing.	Impact of wind and flood damage on factories and supply chains	Risks	• Increasing impact of factors such as property damage to facilities and machinery caused by wind and flooding, profit losses due to the suspension of business, and difficulty in employees coming to work. • Supply chain disruption due to increased wind and flood damage	Short- to long-term	• Flood risk assessments for major sites including future climate • Create and promote BCP (Business Continuity Plan), including for supply chains • Create a structure that enables global substitutions by decentralizing sites • Prepare for supply chain disruption by evaluating alternative procurement methods in advance (focus on production areas with high disaster risks) • Evaluate the flood risk assessments of major suppliers	Changes in our company's financial impacts (expected value) due to floods and storm surges affecting our plants and suppliers* 2025: - ¥70 mil 2030: - ¥100 mil 2050: - ¥540 mil
Chronic	Sea levels continue to rise.	Impact of storm surge on coastal factories	Risks	• Increased storm surge risk, increased property damage and profit losses due to flood damage • Costs incurred for measures such as height elevation and barriers and relocation	Medium- to long-term		

* Drawing on location information for our plants and major suppliers, we used a simulation that employed the Climate Score Global (CSG) model developed by Jupiter Intelligence in the United States to evaluate the inundation depths caused by flooded rivers and storm surges at a resolution of 90 m. Based on this evaluation, we calculated the expected amount of financial impact on profits by tallying up the value of losses to our company due to asset losses at our plants and losses due to shutdown of our plants and major suppliers. This expected value is an index calculated from the amount of losses due to floods and the probability of flood occurrence in a given year. The loss amount is estimated based on a uniform damage rate according to depth of inundation and does not reflect the disaster preparedness measures in place in the areas where sites are located.

Particularly Important Risks and Opportunities

Sub-nano Ceramic Membranes ›

Gallium Nitride (GaN) Wafer ›

AMB and DCB Substrates ›

Zinc Rechargeable Batteries ›

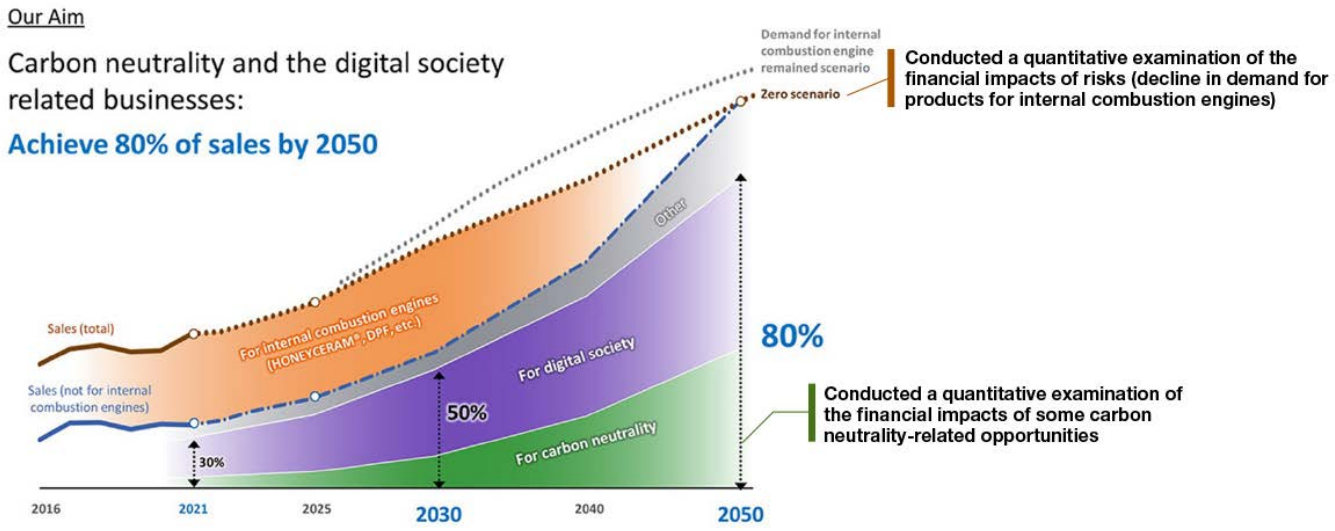
Strategy Based on the Risks and Opportunities of Climate Change

We will pay close attention to both societal and market trends, while recognizing the degree of impact of each of the risks and opportunities we have identified through scenario analysis. And we will take action according to the response strategies we have established for each item.
Among the transition risks are risks accompanying CO_2 emissions. We will mitigate these risks by promoting initiatives aimed at net-zero CO_2 emissions according to our Carbon Neutrality Strategic Roadmap. We are already implementing measures to deal with water-related disaster risks from the standpoint of business continuity planning (BCP). For instance, we are raising land in response to the frequent occurrence of heavy rainfall. With respect to further disasters, we are taking measures to prevent catastrophic damage, with protecting human life as our highest priority. We are aware of the future risks posed by climate change, including those posed by the worst-case scenario of a 4° C increase in temperature. To mitigate these risks, we will continue to evaluate risks while working to strengthen countermeasures such as BCP.

NGK Group Environmental Vision ›

Carbon Neutrality Strategy Roadmap ›

The NGK Group Vision defines our vision as A Company to Contribute to Carbon Neutrality and Digital Society with Our Unique Ceramic Technologies. It also sets a target for products related to these fields to make up 80% of sales by 2050. We used this scenario analysis to calculate the quantitative financial impact on parts of our business that can be assumed at present. This allows us to determine the business opportunities presented by realization of a carbon neutral society. We will continue working to develop new products related to carbon neutrality and digital society to achieve the NGK Group Vision, and aim to provide new value to society as we strive for sustainable growth.

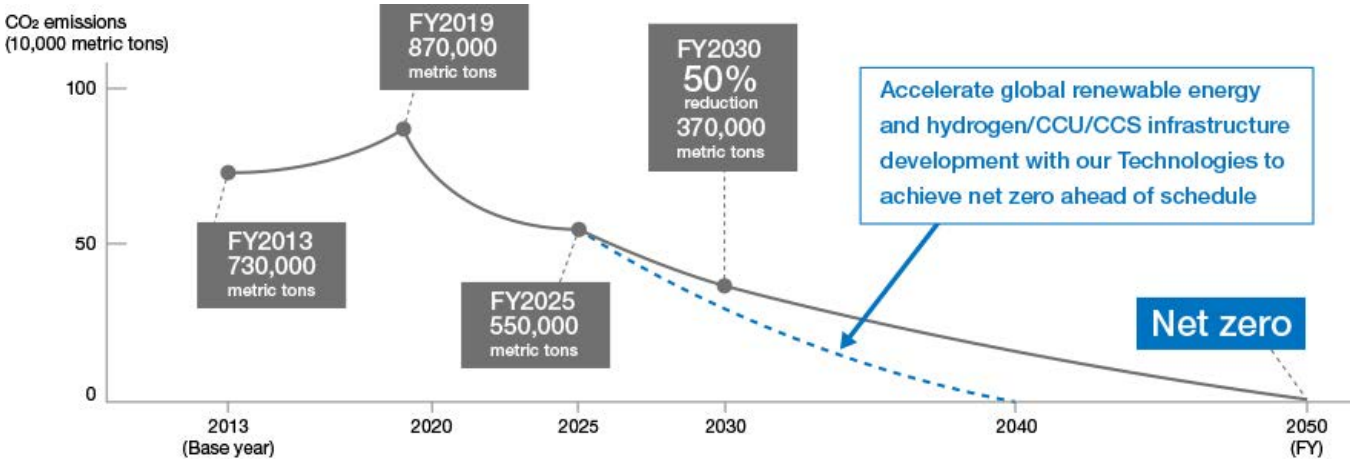


We intend to suitably enhance and deepen our scenario analysis by adding and updating various parameters and external reference scenarios depending on the state of new product development. And we will continue analyzing and considering responses to the impacts that the risks and opportunities posed by climate change can have on our business.

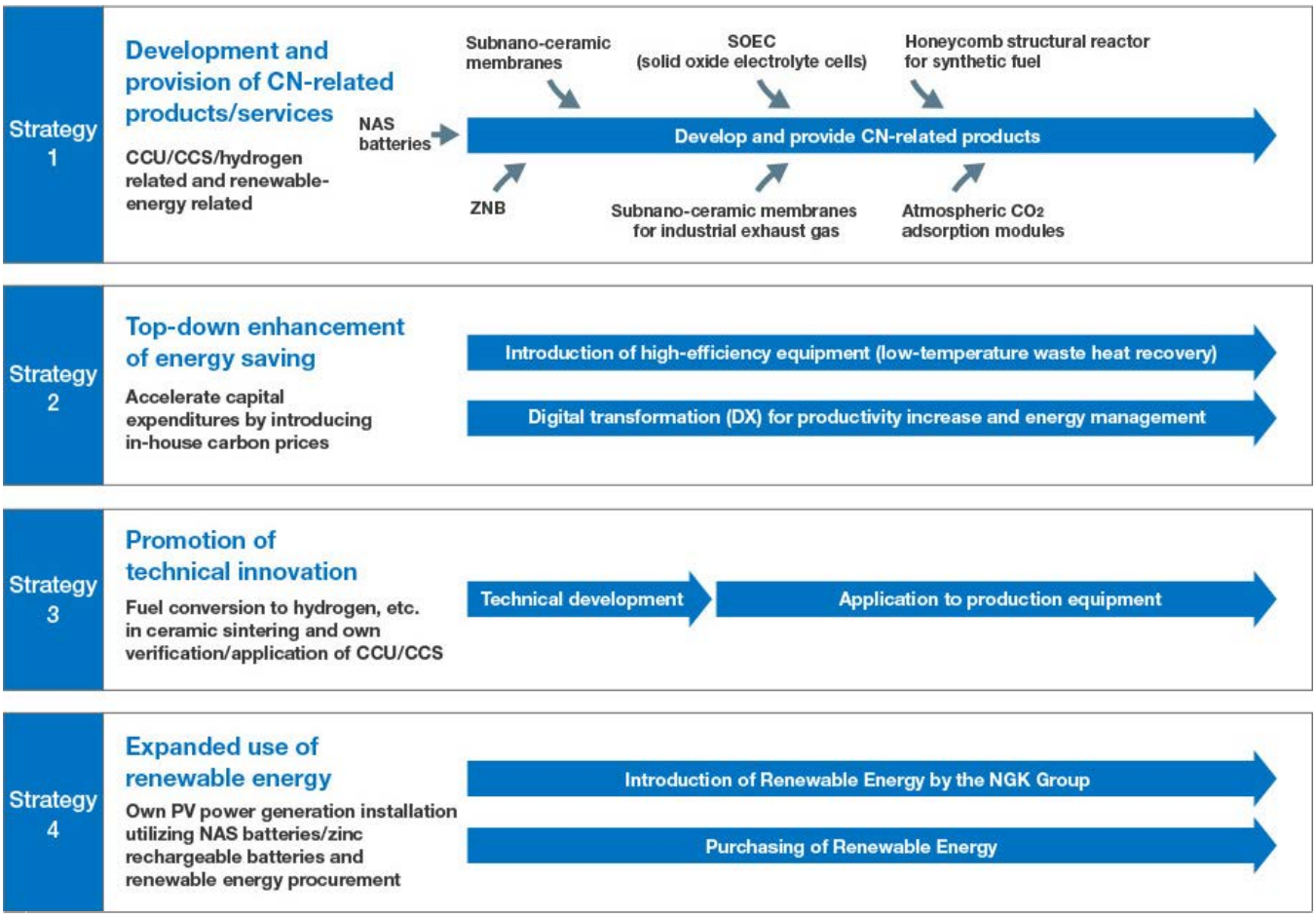
Metrics and Targets

We drafted the Carbon Neutrality Strategic Roadmap to promote goal achievement that will enable us to realize the NGK Group Environmental Vision. We set milestone targets ahead of our 2050 goal of net zero CO_2 emissions for the entire Group. These milestone targets call for a 550,000 ton reduction in emissions by 2025 (25% reduction compared to 2013 (reference year)) and a 370,000 ton reduction by 2030 (50% reduction compared to 2013).

Carbon Neutrality Strategic Roadmap



Four Strategies of the Carbon Neutrality Strategic Roadmap



NGK Group Environmental Vision ›

We drafted our fifth 5-Year Environmental Action Plan to help realize the NGK Group Environmental Vision. This plan outlines targets for the environmental activities we will conduct between FY2021 and FY2025.
The objective of this Plan is to make it easy to understand our progress towards net zero by 2050 and our 2030 milestone target of a 50% reduction compared to 2013. As part of our initiatives to expand our use of renewable energy, we set new targets for renewable energy utilization rates that we apply to electricity consumption for the entire Group. We also set targets to increase the number of products registered as carbon neutral-related products.

5-Year Environmental Action Plan ›

CO_2 Emissions Scope 1・2・3

(Disclosed in May 2023)

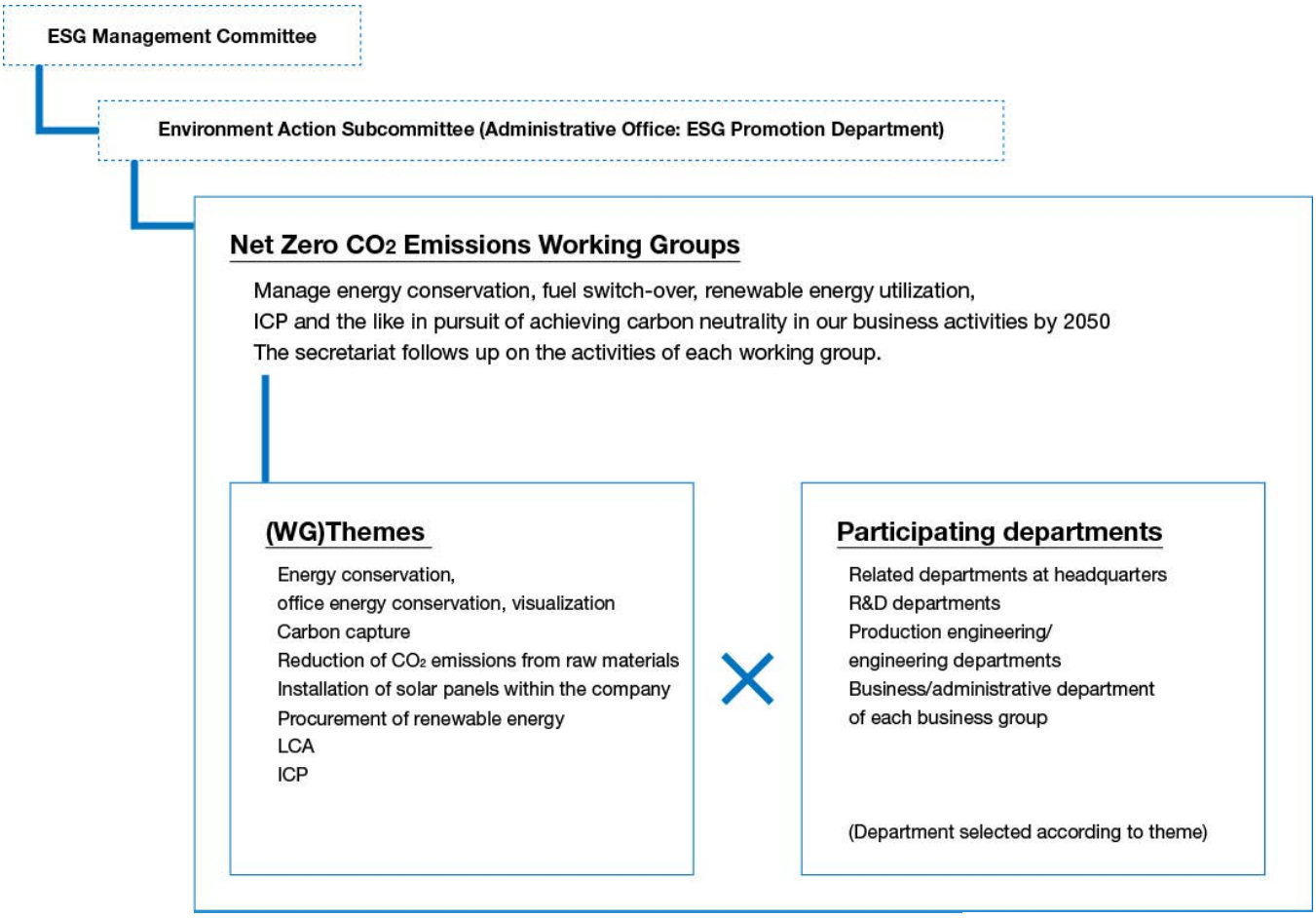
Initiatives toward Carbon Neutrality

The NGK Group considers our response to climate change to be one of our material issues. We will work towards carbon neutrality throughout our entire value chain, and aim for net zero CO_2 emissions in our business activities. In April 2021, we detailed our Carbon Neutrality Strategic Roadmap in our Environmental Vision which comprises four strategies. In line with this roadmap, we are moving forward with activities aimed at achieving our goal of net zero CO_2 emissions by 2050 at the latest.

CO_2 Emissions Reduction Promotion Framework

The NGK Group has been making steady progress toward achieving the CO_2 emissions reduction targets of our fifth 5-Year Environmental Action Plan following the NGK Group Environmental Vision, by creating and implementing annual plans.
From FY2021 through FY2023, NGK launched and implemented the Net Zero CO_2 Emissions Project as a cross-functional organization in an effort to develop a system dedicated to carbon neutrality. With the Senior Vice President responsible for manufacturing engineering departments at headquarters serving as the project leader, it has established working groups based on the four strategies for carbon neutrality whose goal is to implement initiatives on various themes, including improving energy conservation efforts, implementing international carbon pricing (ICP), developing fuel conversion technology, and installing photovoltaic power generation systems. Over the past three years, each working group has created a roadmap and established a system that can implement initiatives toward carbon neutrality. Therefore, starting from FY2024, we have dissolved the project structure and each working group is working independently. The NGK Group supports laws and regulations related to climate change and the reduction of energy consumption (in Japan, the Act on Promotion of Global Warming Countermeasures and the Act on the Rational Use of Energy, etc.), and appropriately responds with policies at our locations inside and outside of Japan.

Net Zero CO_2 Emissions Working Group Promotion Framework

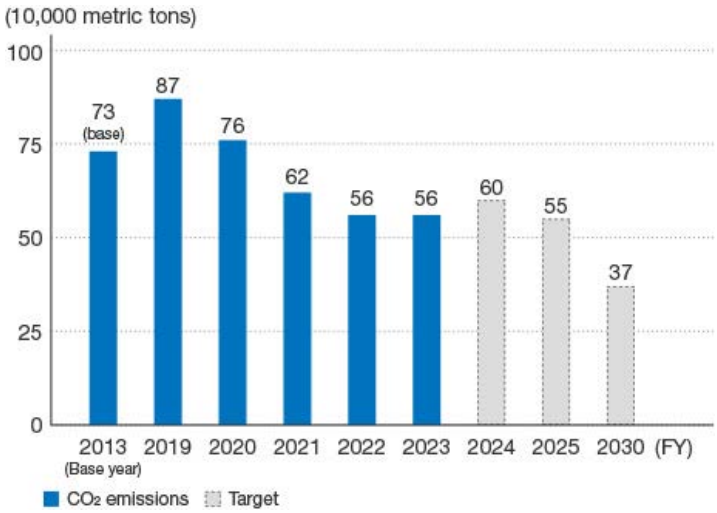


Targets and Achievements

In FY2023, as in FY2022, we made investments in environmental facilities through our energy conservation patrol and ICP, and also improved the operations of our clean rooms and production facilities. Plus, as part of our efforts to make energy use visible, we collected energy data on a monthly basis and shared it on our internal platform.
As a result, we were able to reduce our CO_2 emissions by 31,000 metric tons. Moreover, thanks to initiatives to install photovoltaic power generation systems photovoltaic power generation systems at facilities within the NGK Group, procure renewable energy, and switch to carbon neutral LNG*, we were able to meet our target with 560,000 metric tons of CO_2 emissions in FY2023.
In FY2024, we set our CO_2 emission target at 600,000 metric tons. In addition to the initiatives above, this fiscal year we will continue to promote energy-saving activities, and implement improvements through process improvements and waste heat utilization. However, in our environment business, we expect to see increased demand against a backdrop of recovering passenger car sales and tightening exhaust gas regulations. Therefore, we have set target values based on the possibility of increased emissions. In addition to promoting activities for achieving our targets, we will strengthen energy-saving activities and other efforts in order to limit the increase in actual emissions as much as possible this fiscal year.

* Carbon neutral LNG is a type of LNG considered to have no CO_2 emissions because the emissions it releases are offset using CO_2 credits.

CO_2 Emissions (all NGK Group production sites)



* The figures in the graph include the effect attributable to carbon neutral LNG. Carbon neutral LNG is liquid natural gas that has been offset using CO_2 credits so that it is not considered to generate CO_2 emissions. However, we list it in a separate category since it is not currently eligible for credits under the Act on the Rational Use of Energy.

Efforts to Achieve Carbon Neutrality within the NGK Group

To achieve the NGK Group Environmental Vision, we have formulated a Carbon Neutrality Strategic Roadmap, and are working to reach net zero CO_2 emissions for the entire Group by 2050.

Top-Down Enhancement of Energy Saving

Main Energy Conservation Activities Aimed at Reducing CO_2 Emissions

Category	Measures	Effects (FY2023)
Enhancement of framework to promote energy-saving and energy conservation support for business divisions	– Development of a Group-wide organization for energy conservation – Visualization of monthly energy data – Distribution of brochure of best practices and guidelines for saving energy – Energy conservation patrols and exchange of opinions between the head office and on-site staff	CO_2 reduction effect Reduction from energy conservation activities: 31,000 metric tons

Category	Measures	Effects (FY2023)
Increase efficiency of manufacturing processes	– Introduction of innovative production processes – Facility improvements – Operational improvements	CO_2 reduction effect Reduction from energy conservation activities: 31,000 metric tons
Energy conservation activities for general equipment and buildings	– Operational improvements to things like lighting, air conditioning, steam, and compressed air – Application of ZEB design to newly constructed offices – Management of air conditioning in existing office buildings	

Enhancement of Framework for Promoting Energy-Saving and Energy Conservation Support

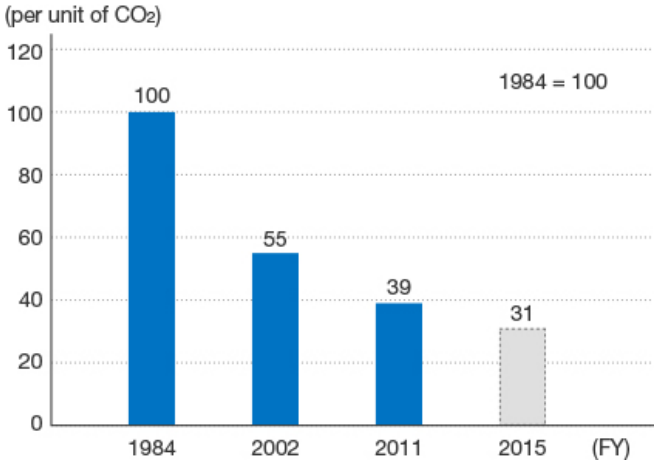
In FY2021, the NGK Group created a system for promoting energy conservation led by the general manager of the manufacturing division. Since then, we have set common energy-saving targets towards the goal of carbon neutrality. We are enhancing our management of planning and progress of reduction activities by collecting monthly energy data and making it visual through the establishment of an internal platform. This is proving to be useful for analysis. Meanwhile, we have created guidelines and a brochure of energy-saving best practices to support energy conservation by business divisions, and have distributed them to all locations inside and outside Japan (Japanese and English versions). In addition, the Engineering Department at our Head Office visits production sites inside and outside Japan to conduct energy conservation patrols and exchange opinions with on-site staff. This has eliminated energy leaks and waste in general equipment (compressors, boilers, air conditioners, etc.), improved the energy efficiency level of production equipment as a whole, and led to a significant reduction in energy costs.

Increase Efficiency of Manufacturing Processes

The NGK Group makes efforts to reduce environmental impacts resulting from production through the introduction of highly energy efficient equipment and the promotion of the recovery and use of exhaust

heat and improved production efficiency. We are committed to creating even more advanced eco-processes, aimed at enhancing competitiveness. Kilns are necessary for the firing process which is integral to the production of ceramics. However, they consume a particularly large amount of energy, so we have long been focused on making them more efficient. As the graph shows, we have achieved a roughly 70% reduction per unit of CO_2 for continuous kilns over the past 30 years.

Comparison of CO_2 Emissions from Continuous Kilns by Year of Introduction



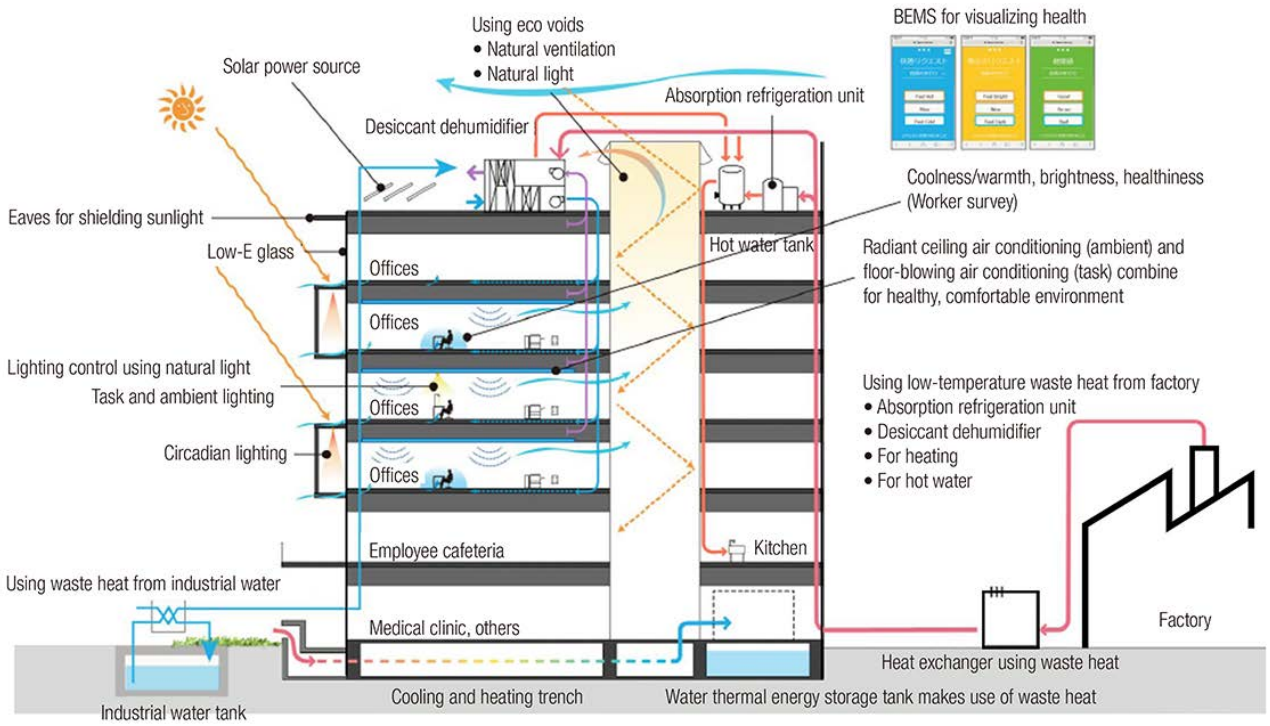
*.Change in per unit of CO_2 emissions from continuous kilns, a typical production facility

Energy Conservation of General Equipment and Buildings

The NGK Group has also been engaged in energy-saving activities for general equipment such as lighting, air conditioning, boilers, and compressors. We have been adopting highly efficient machinery and promoting improvements in operations by switching to LEDs for lighting; switching to inverters, optimizing output, and shading outdoor units for air conditioning; optimizing air volume for compressed air; etc. In this way, we have efficiently linked energy savings from general equipment to greater results through horizontal deployment of common know-how information from departments at our head office to each location.

We work to achieve significant energy savings when renovating or constructing buildings. We do this by actively incorporating highly efficient machinery and renewable energy, and implementing measures that take into account specific location details such as effectively utilizing low temperature waste heat from our nearby plants, and exploiting natural ventilation and natural lighting. Our new administrative/welfare wing in Mizuho, Nagoya (completed in October 2020) is a ZEB (zero energy building)-oriented office facility that incorporates these measures, and aims to reduce CO_2 emissions to less than half that of standard building energy consumption. This construction project has been lauded for its pioneering CO_2 reduction technology, and it was adopted as a Leading Sustainable Building Project (CO_2 Reduction) by Japan's Ministry of Land, Infrastructure, Transport and Tourism. This allowed us to achieve ZEB readiness in FY2022. It has been lauded as a model for other companies, because it achieved ZEB-Ready status based on its utilization of unused low-temperature waste heat from our plant and its adjustment of air conditioning with consideration for the comfort of employees. And in FY2023, we won the Agency for Natural Resources and EEnergy Commissioner's Award (Business Category), Best Practice Category of the FY2023 Energy Conservation Grand Prize Award sponsored by The Energy Conservation Center, Japan (ECCJ). Due to changes to our business structure and the aging of buildings, we have many plans to construct new buildings and renovate existing ones. So, we will work to implement energy conservation, meet ZEB standards, and improve operations to more efficiently utilize energy as we have the opportunity.

New Administration/Welfare Wing



Implementation of Internal Carbon Pricing

Internal carbon pricing (ICP) refers to the establishment and use of in-house carbon pricing for the purpose of promoting decarbonization-focused investment and policies.
Starting in FY2022, NGK has introduced an ICP to incentivize investment in high-efficiency equipment and facilities and renewable energy-related infrastructure that will realize the NGK Group Environmental Vision target of net zero CO_2 emissions by 2050. We are also evaluating the possibility of introducing equipment. In FY2023, since the International Energy Agency (IEA) revised the CO_2 price used to set the ICP, we revised our ICP to US$140/metric ton-$CO_2$ and applied this ICP to the return-on-investment calculation when installing waste heat utilization and photovoltaic power generation systems to reduce CO_2 emissions. Going forward, we will pay attention to societal trends and start to consider further application of internal carbon charges.

Promoting Technological Innovation

We can reduce our Scope 2 CO_2 emissions through efforts such as adopting renewable energy, but the production of ceramic products which is our forte requires a firing process. For this process we must utilize fuels such as natural gas. For this reason, we are developing technology to transition to fuels

such as hydrogen or ammonia, which will make the fuel used in the firing process free of CO_2 emissions. In FY2022 we installed a mass production demonstration kiln with the goal of practical utilization of hydrogen burners in kilns. In FY2023, we verified the durability of the burner and heat distribution within the kiln for this mass production demonstration kiln.
In addition, as we prepare for the roll out of hydrogen and ammonia infrastructure, we are also demonstrating CCS (Carbon Capture and Storage) to collect the CO_2 emitted from our plant as exhaust gas. In the future, we plan to move on to demonstrating methanation, which uses captured CO_2 and hydrogen to synthesize methane, which is the primary component of natural gas.

Expanding Use of Renewable Energy

The NGK Group needs to expand the use of renewable energy to achieve the goal of net zero emissions in 2050 under the NGK Group Environmental Vision. With regards to electric power in particular, we are a member of RE100 (100% Renewable Electricity), and have promised that all of the electric power used in our business will come from renewable energy by 2040. In order to achieve this target, we are systematically promoting installation of photovoltaic power generation systems and procurement of renewable energy while being cognizant of the associated costs.
We have been installing photovoltaic power generation systems at production sites both inside and outside Japan since FY2021, including our NCDK Tajimi Plant and ACC (NGK CERAMICS SUZHOU CO., LTD.). In FY2023, we continued to install such systems at our Nagoya site and Ishikawa Plant in Japan, and our overseas production site ACP (NGK CERAMICS POLSKA).
Regarding environmental value acquisition through the purchase of electric power derived from renewable energy and Green Power Certificates, we have focused on procurement at our overseas production sites. And in FY2021, we reached the goal of procuring 100% of electricity from renewable energy sources at all manufacturing sites in Europe: ACP, ACE (NGK CERAMICS EUROPE) and NBF (NGK BERYLCO FRANCE). Specifically, fuel was procured from renewable energy sources at NGK BERYLCO FRANCE, which became the first manufacturing site within the NGK Group to use 100% renewable energy for both electricity and fuel. In North America, NGK-LOCKE has switched over to using 100% renewable energy for electricity as well.
Regarding fuel, NGK's Nagoya, Chita, and Komaki sites, as well as NGK CERAMIC DEVICE headquarters, use carbon neutral LNG credits to reduce their CO_2 emissions.
Efforts including the installation of photovoltaic power generation systems and procurement of renewable energy mentioned above led to a reduction of 210,000 metric tons of CO_2 emissions in FY2023. Going forward, we will continue to expand the installation of photovoltaic power generation systems and procurement of renewable energy at our sites. We will work to achieve a rate of 50%utilization of electric power from renewable energy by FY2025.

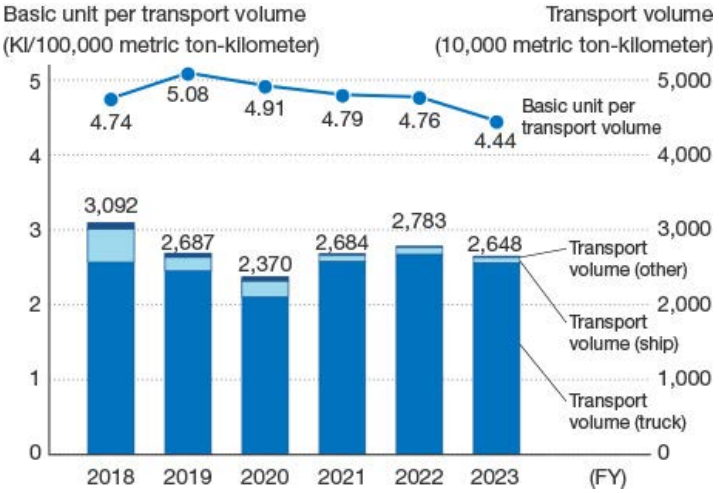
Efforts to Achieve Carbon Neutrality throughout Our Entire Value Chain

In order to promote carbon neutrality, it is important to understand not only our own Scope 1 and Scope 2 CO_2 emissions, but the Scope 3 CO_2 emissions in our value chain, and to work with suppliers and customers to reduce them.

Scope 3 Initiatives

Scope 3 refers to indirect emissions of greenhouse gases throughout the entire value chain other than Scope 1 and Scope 2. In FY2022 the NGK Group began to monitor CO_2 emissions for the entire Group. The actual amount for FY2023 was 3.27 million metric tons. Category 1 of Scope 3 (purchased goods and services) accounted for the largest amount at 1.88 million metric tons, followed by Category 11 (use of sold products) at 1.02 million metric tons. So we believe it is important to prioritize reducing emissions in these categories. Going forward, we will work with our suppliers to reduce emissions in line with the emissions reduction targets set in the standards published by the SBTi. On the other hand, Scope 3 Category 4 (Upstream transportation and distribution) accounted for a relatively small percentage at 110,000 metric tons. NGK had already been complying with Japan's Act on the Rational Use of Energy and implementing reduction measures such as a modal shift and improving our loading ratio. The basic unit per transport volume has been improving over the past few years due to changes in our product makeup. In FY2023, it improved by 0.7% over the previous year. Hereafter, we will strive to reduce emissions throughout the entire NGK Group.

Changes in Transportation Volume and Basic Unit per Transport Volume



Calculating Carbon Footprint (CFP) in Life Cycle Assessment

Life cycle assessment (LCA) is a quantitative evaluation method for environmental impacts of products and services throughout their entire lifecycle (raw material extraction-raw material production-product manufacturing-distribution/consumption-disposal/recycling). To promote reductions throughout the whole value chain, the first step of initiatives should be to understand CO_2 emissions from the LCA of NGK's own products, in addition to Scope 3 calculations relevant to the entire company. The NGK Group has set a target of calculating CFP through life cycle assessment of major products in the fifth 5-Year Environmental Action Plan. We began CFP calculations based on ISO 14040 in FY2021. We will identify processes with a lot of CO_2 emissions for our main products and new products, and work to reduce emissions. Hereafter, we aim to provide highly competitive products with a low carbon footprint by conducting life cycle assessment in the product planning and design stages.

Participation in Initiatives Related to Carbon Neutrality and Certification by External Organizations

Task Force on Climate-Related Financial Disclosures (TCFD)

In February 2020, we announced our support for the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) established by the Financial Stability Board (FSB), and we began disclosing information based on the TCFD recommendation in April 2022.

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Information Disclosure Based on TCFD Recommendations ›

SBTi (Science Based Targets initiative)

In April 2022, we submitted a commitment letter to the Science Based Targets initiative (SBTi), an accreditation body for Science Based Targets (SBT), and obtained certification for our short-term and net-zero targets in July 2024.

NGK Acquires Certification under the Science Based Targets initiative (SBTi) Net-Zero Standard ›

Membership in RE100

In October 2022, we joined the RE100 international initiative, which aims to replace 100% of the electricity used in business activities with renewable energy. We aim to get 50% of our electricity from renewable sources by 2025, and achieved the goal of 25% in 2023.

RE100 | CLIMATE GROUP | CDP

Winner of the Energy Conservation Grand Prize Award

In FY2023, our new administration/welfare wing in Mizuho, Nagoya won the Agency for Natural Resources and Energy Commissioner's Award (Business Category), Best Practice Category of the FY2023 Energy Conservation Grand Prize Award sponsored by The Energy Conservation Center, Japan (ECCJ).

Award theme title: Initiative for Energy-Efficient Buildings Using Low-Temperature Factory Exhaust Heat

Waste Reduction and Effective Use of Resources

The NGK Group conducts business which utilizes natural resources primarily in the procurement of raw materials for ceramics, and generates a considerable amount of waste in the process. Therefore, we believe that properly managing waste and resource use, and improving resource efficiency, will help to reduce the impact on the environment. In addition, we believe that increasing resource efficiency and appropriately responding to the shift to a Recycling-Oriented Society will make NGK more competitive in terms of cost reduction and stable supply.
Based on this line of thought, the NGK Group sees promoting resource recycling as an important issue in the environmental sector, and will advance relevant initiatives.

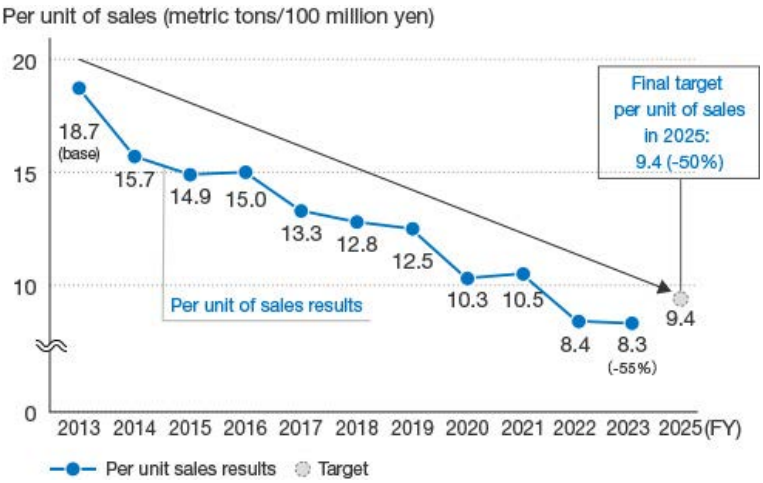
Targets and Achievements

Reducing Waste

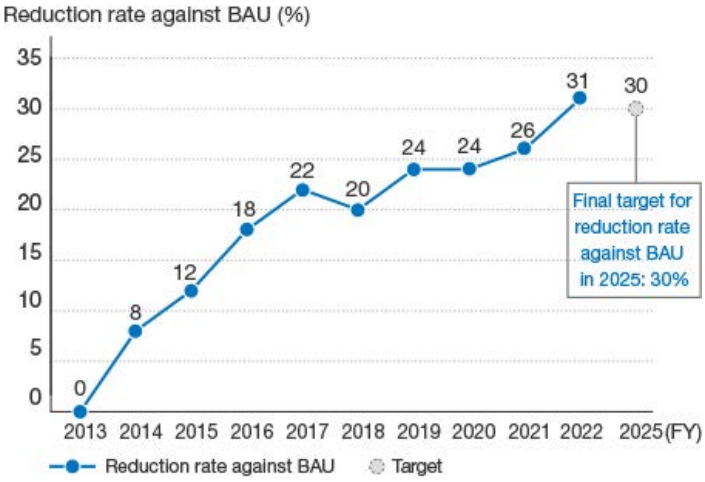
To meet our FY2025 target for reduction of waste, the NGK Group has formulated and is implementing an annual improvement plan, similar to that for CO_2 emissions, aimed at reducing the generation of waste materials.
We achieved reduction rate of 55% per unit of sales in FY2023 compared to FY2013, achieving our annual target and even reaching our FY2025 target of 50% reduction. This is the result of continual improvement activities by the manufacturing department, including improving yield and raw material recovery rate in production sites.
Our reduction rate against BAU, which indicates the improvement per unit of sales over FY2013, was 31%. So, we have achieved our annual target, as well as our target of 30% for FY2025. Going forward, we will continue to carry out activities to reduce waste.

* 1. Ratio of actual waste generated to the amount of waste expected to be generated assuming production intensity has not changed from the base year.

Waste Materials (all NGK Group production sites)



Reduction Rate against BAU (all NGK Group production sites)



Waste Recycling

The NGK Group is striving to promote waste recycling by thoroughly sorting materials and looking for methods to recover resources from waste.
Since FY2017, we have shared methods to recover resources from waste and information about disposal companies with all of our production sites in Japan. We are promoting efficient resource recovery while selecting reliable disposal companies.
These continuing efforts have allowed us to maintain a continual domestic recycling rate of 99% or higher from FY2013 onward, as stated among the goals of our 5-Year action plan. And we are recycling ceramic fragments (ceramic waste after firing) and slurry (ceramic waste before firing) as raw materials for concrete, and other materials for use in roadbeds.
Because conditions vary by region outside of Japan, we are setting targets which take into account the actual state of affairs in each country. We maintain an average recycling rate of more than 90% for our 18 overseas Group companies that are engaged in manufacturing (excluding the three companies for which recycling is difficult).

Reducing Waste Plastics

This year, the NGK Group began to disclose the amount of waste plastic generated during production. 1,456 metric tons of plastic waste was generated in FY2023. From here on out, we will work to reduce the amount of plastic waste generated by reviewing the processes that use plastic and the sorting out of plastic when it is generated.
In addition, it had previously been difficult for NGK to recycle the plastic drums used to import raw materials after they had been used and worn out. However, through cooperation with a plastic recycling manufacturer, 100% of them are now recycled into the RePlagi series of industrial/construction materials developed and sold by that manufacturer. These are used as replacement square timbers, replacement plates for steel plates, etc.

Support for a Circular Economy

In Europe, it will be necessary to comply with new battery regulations and eco-design regulations. The NGK Group will investigate trends related to the circular economy, and respond appropriately to the demands of society.
We are developing products that contribute to water utilization and resource recycling. And we are investigating the possibility of using recycled materials and redesigning existing products for zero emissions.
Going forward, we will put together and disclose examples of resource recycling in the NGK Group. At the same time, we will consider policies for a circular society by 2030 and 2050 to include in our NGK Group Environmental Vision.

Water Resource Conservation

Basic Approach

The NGK Group holds that promoting resource recycling is a key issue for our business. We, therefore, also strive to efficiently utilize the water needed for manufacturing ceramics. We also believe that these efforts will help to reduce the burden on the global environment. Moving forward, we will expand them to our supply chain and endeavor to further reduce water risks.

Targets and Achievements

Under the fifth 5-Year Environmental Action Plan which started in FY2021, we set water withdrawals per unit of sales for the entire Group as an indicator. Then, to begin with, we set a target of maintaining a level of 1,000 m^3/100 million yen per unit of sales, which was the level in FY2019 before the drop in production due to impacts from the COVID-19 pandemic. In FY2023, we achieved this target at 730 m^3/100 million yen.

Handling and Risk Management of Water Resources

The NGK Group strives for efficient utilization of water and management of risks related to water resources from the perspective of sustainability.
Since last fiscal year, we have begun investigating water risks and environmental impacts at each of our locations, using the LEAP approach recommended by the Taskforce on Nature-related Financial Disclosures (TNFD).
In FY2023, there were no major violations of standards or regulations related to wastewater quality at any NGK Group locations inside or outside of Japan.

Evaluation of Water Risks

With regards to water risks at all production sites both inside and outside Japan, we have used simple methods to assess the degree of water shortage at each site based on the amount of water supplied by rivers in the region where it is located. Meanwhile, we have commissioned a detailed third-party analysis focusing on our overseas sites. In its assessment of water supply and demand risks, this detailed analysis forecasts future water supply by evaluating aquifers, seasonal variations, and the water storage capacity of dams, in addition to the amount of water supplied by rivers. Aside from this, it also analyzes water disaster risks (floods and landslides) and water quality risks (sanitation and ecology), to provide a comprehensive risk assessment.
These efforts have enabled us to ascertain the water risks at all overseas production sites, and share

this information with each site.
None of the sites currently faces serious water risks, but we continue to keep an eye on regulatory trends, and are working to improve water utilization efficiency as necessary.
We also use the analysis tool Aqueduct to assess water risks for our main suppliers with the goal of strengthening our supply chain.

Number of Overseas Production Sites in Regions with Latent Water Risks

Region	No. of sites	Water supply and demand		Water disasters	Vulnerability to water pollution	
		Current	2040		Public health	Ecosystems
North and Central America	5	0	1	0	0	0
Europe and other regions	5	2	0	0	2	3
China	3	0	0	0	0	0
Asia and Australia	7	0	5	0	1	1

Efficiency of Water Utilization at Group Companies

We created guidelines aimed at optimizing water use (implementation status checklist), and have conducted current situation surveys for efficient water utilization at all production sites inside and outside of Japan since FY2015. Hereafter, we will work to flesh out these guidelines through case research at each Group site, as well as other companies, and promote efforts to optimize water use at our sites. In this way, we are preparing against future deterioration in water supply and demand.

Utilization of Reclaimed Water at NGK Ceramic Device (NCDK)

The production process for SAW bonded wafers, manufactured by our NCDK Komaki Plant, consumes large quantities of water. So we installed a system which uses ceramic membrane filters to reclaim this water, and began using it in April 2022. Adoption of this system has allowed us to supply approximately 37,000 m3 of reclaimed water, out of our approximately 170,000 m3 of water intake during FY2023. Meanwhile, we have introduced an even higher capacity system at the NCDK Fujiyoshida Plant, which uses the same process. So, we are promoting more efficient water use even in Japan, where water supply and demand risks are small.

Water reclamation system in operation at NCDK Fujiyoshida Plant

Information Disclosure Based on TNFD Recommendations

What is TNFD?

The Taskforce on Nature-related Financial Disclosures is a global initiative launched in 2021 amidst an international sense of crisis about environmental degradation and the increasing importance of restoring nature. Its aim is to construct a framework for risk management and disclosure of nature-related risks by companies. The taskforce presented its recommendations in September 2023, calling for companies to be aware that nature-related issues are related to strategic risks, and encouraging companies to identify and disclose the nature-related dependencies and impacts they have through their business, as well as the accompanying risks and opportunities.
The TNFD recommendations lay out a framework for disclosure with the same four basic pillars as the Task Force on Climate-related Financial Disclosures (TCFD): governance, strategy, risk and impact management, and metrics and targets. Moreover, these four pillars contain disclosure items that are specific to nature-related issues. For example, since nature-related risks and opportunities are easily influenced by the local natural characteristics in which companies are involved, so it is recommended that disclosures be based on the locations in which companies interact with nature through their value chain.
Also, in January 2024, the NGK Group declared that we would begin early disclosure as a TNFD Early Adopter.

* 1. Companies and organizations that will begin information disclosure by FY2025 (As of January 2024: 320 companies in 46 countries, 80 of them Japanese)

NGK Group Approach to Nature and Biodiversity

Our society and its economic activities depend on nature and its blessings. But nature is said to be in rapid decline worldwide. Amidst a growing sense of urgency and awareness of the importance of restoring nature, the Kunming-Montreal Global Biodiversity Framework (GBF) was adopted at the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15) in 2022. It sets a common global goal of being "nature positive," which means taking action to stop and reverse the loss of biodiversity by 2030.

Since nature-related issues may have an impact on the NGK Group's business activities themselves, we believe that it is important to ascertain how our business relies on nature throughout our entire value chain, and what kind of impact our business is having on nature. In the NGK Group Environmental Vision, we set the idea of harmony with nature as one of our most important issues. And NGK aims to operate in harmony with nature by minimizing its environmental impact on ecosystems and raising awareness among each and every employee through awareness-raising activities.

Objectives of Disclosure

Through proactive TNFD disclosure, NGK will make clear the interface between the NGK Group's business activities and nature, ascertain the importance of our dependencies and impacts on nature, as well as related risks and opportunities, and meet the expectations of society and stakeholders. In addition, through disclosure the entire Group will promote nature-related initiatives, which will help to achieve the goal of coexistence with nature espoused in the NGK Group Environmental Vision and bring about a sustainable society.

Scope of Disclosure

To achieve full disclosure in line with the TNFD recommendations by FY2025, we are considering TNFD recommendations and their evaluation method, the LEAP approach (described below), to identify nature-related dependencies, impacts, risks, and opportunities for the NGK Group. Since the TNFD recommendations recommend partial disclosure in advance, this time we will disclose the results of analysis as of July 2024, based on the LEAP approach.
Moreover, the details of this disclosure have been reported to the Board of Directors following deliberation by the ESG Management Committee.

Overview of LEAP Approach

The TNFD recommendations endorse analysis based on the LEAP approach as a method for evaluating nature-related dependencies, impacts, risks, and opportunities. The LEAP approach consists of the processes: Locate, Evaluate, Assess, and Prepare, the details of which are shown in the table below.

Implementation Details of LEAP Approach

Locate the Interface with Nature	Evaluate Dependencies and Impacts	Assess Risks and Opportunities	Prepare to Respond & Report
- Consider areas in the value chain where dependencies and impacts on nature are important - Understand the activity locations and related ecosystems for areas in our business locations and value chain where dependencies and impacts on nature are important - Evaluate priority areas (ecologically sensitive areas, areas where dependencies and impacts are important)	- Identify the dependencies and impacts on ecological services at each place in our business locations or value chain - Evaluate and measure important dependencies and impacts	- Identify and evaluate the importance of nature-related risks and opportunities based on the details of our dependencies and impacts - Identify particularly high-priority risks and opportunities - Consider management process for risks and opportunities	- Consider handling strategy based on contents of evaluation - Consider method for setting targets - Consider details of information disclosure

Sorting Out Dependencies and Impacts on Nature throughout Business Value Chain

Based on the LEAP approach, we created a heat map for each NGK Group business of the importance of dependencies on ecosystem services and the impact on nature at each major stage of the value chain with reference to the tools ENCORE[*2] and SBTs for Nature[*3], as well as the CDP water impact tool[*4]. This allowed us to gain an overall picture of the dependencies and impacts of the business.

Please note that the content of this disclosure is only a provisional assessment of the importance of dependencies and impacts on nature based on information gained from academic papers and research results in fields to which the NGK Group's business belongs or is similar to. It is not based on the actual state of the NGK Group's business. Going forward, we will conduct a fact-finding survey to comprehensively determine the actual degree of impact, business scope, etc. and review the level of importance of the dependencies and impacts.

* 2. A tool developed through collaboration between the Natural Capital Finance Alliance, a network of financial institutions, and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) to help financial institutions ascertain the impact of companies on nature and the extent of their dependence on nature.

* 3. A tool recommended for use in goal setting by SBTs for Nature, an initiative that develops and promotes science-based goal-setting approaches related to nature. It allows you to select a sector or activity and check the importance of impacts on nature at that industry level.

* 4. A tool for evaluating the degree of impact on water (water withdrawal, pollution) by industry. It is provided by CDP, a non-profit organization that operates a global information disclosure system for companies and others to disclose information on their environmental impacts.

Results of Assessment of Dependencies and Impacts on Nature in Primary Value Chain (General assessment of industrial fields similar to that of the NGK Group)

Primary value chain	Dependencies on nature				Impacts on nature							
	Supply service	Regulation service			Climate change	Land use changes	Resource use	Pollution				Other
	Water resources	Water cycle and water quality	Climate regulation	Disaster mitigation and soil stabilization	Greenhouse gas emissions	Terrestrial ecosystem use	Water use	Waste	Air pollution other than greenhouse gases	Soil pollution	Water pollution	Disruption
Procurement	H	H	H	M	–	VH	H	H	–	H	VH	–
Production	M	M	VL	M	H	M	VH	H	H	H	H	M
Logistics	–	–	H	M	H	–	–	–	H	L	L	H
Sales	–	–	H	M	M	–	–	–	–	–	–	–

VH	Very High	H	High	M	Medium	L	Low	VL	Very Low

The results of the assessment mainly identified the following for each stage of the value chain.

Procurement Stage

In terms of dependencies, we have large dependencies on nature from the perspective of water resource use, water cycle/quality, and climate regulation.
In terms of impact, we have a significant impact due to changes in land use and water pollution when extracting raw materials derived from nature.

Production Stage

In terms of impact, we have a significant impact from water use.

Logistics and Sales Stage

In terms of dependence, we have a significant dependence on nature in terms of climate regulation.

Ascertaining Points of Contact with Nature at NGK Group Production Sites

We evaluated the points of contact with nature for the NGK Group's production sites. In our evaluation, we used a variety of data on the importance of biodiversity and the integrity of ecosystems*5. This includes big data on biodiversity based on the academic expertise of Think Nature Inc. Concerning physical risks for water, we also used databases related to water risks, pollution, etc.

Evaluation Conducted on Points of Contact with Nature

Examination Item	Details
Evaluation concerning importance of biodiversity	– Assess proximity of production facilities to protected areas*6 and Key Biodiversity Areas (KBAs)*7 – Investigate importance of biodiversity at latitude and longitude of production site
Evaluation of ecosystem integrity	– Evaluate integrity of ecosystem at latitude and longitude of production site, and evaluate development pressures
Evaluation of physical water risks	– Investigate water stress, water pollution, and risk of water-related disaster

* 5. This is an indicator of ecosystem health, and it can be said that areas with advanced urbanization have low ecological integrity.

* 6. Areas protected by region, country, international treaty, etc.

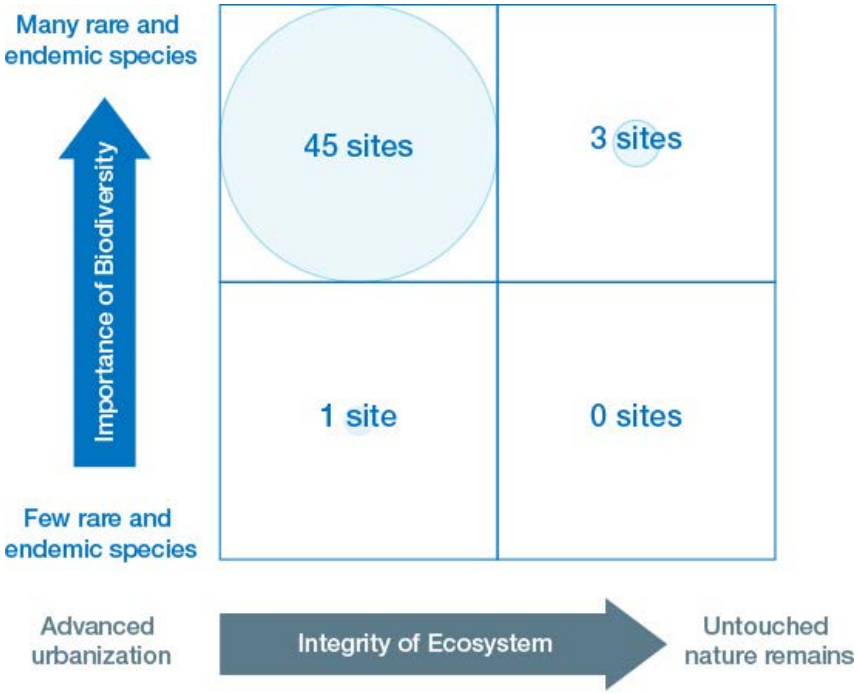
* 7. Key Biodiversity Areas (KBAs) which have been identified based on standardized scientific criteria and thresholds and are important for protecting biodiversity.

Results of Evaluation of Importance of Biodiversity and Integrity of Ecosystems

The NGK Group evaluated the importance of biodiversity and integrity of ecosystems at 49 of our production sites in Japan and around the world. As the figure below shows, many of our production sites are in areas where biodiversity is very important (areas with many rare and endemic organisms) and areas where the integrity of the ecosystem is low (areas with a high degree of ecosystem loss). In addition, you can see that some sites are in protected areas (IUCN Category IV: Habitat/Species Management Areas*8) or within a 500-meter radius of areas that are important to biodiversity. We work to prevent environmental pollution and improve environmental conservation by ensuring NGK and relevant sites abide by environmental laws and other requirements, and by instituting our own voluntary standards. Going forward, we will select several sites on a priority basis for detailed analysis, taking into account the results of this survey and business details of each site.

* 8. Categories of protected areas aimed at protecting and restoring important plants, animals, and habitats at global, national, and regional levels.

Results of a General Evaluation of the Importance of Biodiversity and Integrity of Ecosystems at Production Sites inside and outside of Japan



Physical Water Risks

In the same way, we evaluated 49 NGK Group production sites inside and outside Japan. The results confirmed that there were no high-risk sites in terms of water pollution. On the other hand, it was found that some sites were high-risk in terms of the risk of water-related disaster and water stress. Based on these results, we will select several sites for detailed analysis in the future.

Overview of Nature-Related Risks and Opportunities

We referenced the risk classification in the TNFD recommendations, and confirmed the specific risks and opportunities currently expected based on the primary nature-related dependencies and impacts for the entire NGK Group. First, the table below shows the primary nature-related dependencies, negative impacts and risks expected at present.

Primary Nature-Related Dependencies, Impacts, and Risks

Risk Category		Primary Dependencies and Impacts	Risks
Physical Risks	Acute/ Chronic	- Dependence on water resources for raw material extraction and manufacturing processes	- Water shortages due to excessive water withdrawal and climate change
		- Dependence on climate regulation, disaster mitigation, and soil stability	- Disasters due to decline in climate regulation, disaster mitigation, and soil stabilization capacity
Transitional Risks	Policy	- Dependence on natural resources - Land changes due to raw material extraction	- Increasing prices due to restrictions on resource extraction and land changes
		- Water use	- Increasing water prices due to restrictions on water withdrawal
		- Emissions of pollutants - Water pollution	- Increased handling costs due to strengthening of obligations for information disclosure regarding pollutant emissions, water, and raw materials
	Market	- Natural resource use - Land changes due to raw material extraction - Water use, water pollution	- Increasing prices of sustainable raw materials (recycled materials, certified materials, etc.)

Risk Category		Primary Dependencies and Impacts	Risks
Transitional Risks	Reputation/ Liability	- Factory land use - Emissions of pollutants - Water use	- Deteriorating reputation and decline in sales due to generation of pollution and water pollution, and excessive water use - Increasing costs due to legal claims such as fines

Next, the NGK Group develops and provides products and technologies that contribute to the global environment. The table below shows the expected opportunities at present for each of our main products to make a positive impact on nature.

Nature-Related Positive Impacts from NGK Group Products

Business Details		Products	Positive Impacts on Nature						
			Climate change	Land use changes	Resource use	Contamination/Decontamination			
			Green house gas emissions	Terre strial ecosy stem use	Other resource use	Waste	Air pollution other than green house gases	Soil pollution	Water pollution
Environment Business Group	Auto motive Ceramics Business	Ceramics for exhaust gas purification		●	●	●	●	●	●
		NOx sensors		●	●	●	●	●	●
	Industrial Process Business	Industrial heating systems, Refractory products	●	●	●	●			

Business Details		Products	Positive Impacts on Nature						
			Climate change	Land use changes	Resource use	Contamination/Decontamination			
			Green house gas emissions	Terre strial ecosy stem use	Other resource use	Waste	Air pollution other than green house gases	Soil pollution	Water pollution
Environment Business Group	Industrial Process Business	Membrane separating systems	●			●			●
		High-temperature dust collector		●	●	●	●		
		Low-level radioactive waste treatment units	●			●	●		
Digital Society Business Group	HPC Business	Ceramics for semicon ductor manu facturing equipment				●			
	Electronic Devices Business	EnerCera battery	●		●	●			
	PEC Business	AMB and DCB substrates	●			●			

Business Details		Products	Positive Impacts on Nature						
			Climate change	Land use changes	Resource use	Contamination/Decontamination			
			Green house gas emissions	Terre strial ecosy stem use	Other resource use	Waste	Air pollution other than green house gases	Soil pollution	Water pollution
Digital Society Business Group	Special Metals and Mold Business	Special metals and mold products	●		●	●			
Energy & Industry Business Group	Energy Storage Business	NAS batteries	●	●	●	●			
	Insulator Business	Insulators	●	●	●	●			

Hereafter, as interest in nature grows stronger worldwide, there is a risk that the cost of procuring raw materials derived from nature will increase. On the other hand, ceramics are generally heat-resistant, corrosion-resistant, durable, and have a long service life. So, it is possible to reduce the raw materials used and waste generated compared to when using other materials.
In addition, we expect the products and services provided by the NGK Group to help reduce impacts on nature.
For example, we have increased the performance of ceramics for purifying automobile exhaust by making their walls ultra-thin. They purify harmful substances contained in automobile exhaust gases even more effectively than existing products. Plus, NAS batteries can regulate the balance of supply and demand for renewable energy generation, which varies depending on weather, day/night cycles, etc. This reduces the amount of electricity generated through reliance on natural resources like fossil fuels.

The NGK Group has long believed that contributing to society through our business activities is one of our most important missions. Leveraging the skills we have built up in the century since our founding, we plan to help achieve carbon neutrality and bring about the digital society outlined in the NGK Group Vision, and to develop and provide products and technologies that contribute to the global environment.

Products / Services Contributing to Environmental Protection ›

Future Initiatives

Moving forward, the NGK Group will reassess our dependence and impact on nature as well as our risks and opportunities related to nature. This assessment will be based on the characteristics of our business operations and production facilities combined with the objective results of our recent evaluation. In particular, the assessment of our dependence and impact on nature will focus on whether or not our actual use of water resources and land use causes an environmental impact. On the subject of the connection between production facilities and nature, we will carefully examine the actual impact our operating activities have on nature. In addition to these detailed surveys, we will also enhance four pillars of information as we prepare to provide information disclosure for 14 categories based on TNFD recommendations in FY2025.

Reference: Existing nature-related initiatives

Protecting and Restoring Biodiversity ›

(Written in July 2024)

Protecting and Restoring Biodiversity

The Kunming-Montreal Global Biodiversity Framework (GBF) was adopted at the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15) held in Montreal Canada in December 2022. It set a goal of being Nature Positive, which means taking action to stop and reverse the loss of biodiversity by 2030. Moreover, the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) announced in September 2023 call for companies to be aware that nature-related issues are related to strategic risks. They also encourage companies to identify and disclose their dependence and impacts on nature through their business, as well as the accompanying risks and opportunities.
In light of these international trends, and in light of our relationship with nature, the NGK Group recognizes the importance of understanding the degree of dependence and impact that its business has on nature throughout its entire value chain. The NGK Group sees protecting and restoring biodiversity as an important issue, and is promoting relevant initiatives.

Targets and Achievements

Our NGK Group Environmental Vision makes it clear that our goal is to help achieve coexistence with nature. To this end, we strive to live in harmony with nature by minimizing the environmental burden on ecosystems, and by raising the awareness of each employee through awareness-raising activities. Moreover, our fifth 5-Year Environmental Action Plan is organized around the theme of promoting the conservation of biodiversity. In our FY2025 goal, we pledge to expand and enhance actions aimed at Aichi Targets.
In FY2023, we investigated trends inside and outside Japan as we prepared to support TNFD disclosure, following the LEAP (Locate, Evaluate, Assess, Prepare) approach proposed by the TNFD framework to begin evaluating risks and opportunities. Hereafter, we will continue to promote activities, and develop content for disclosure.

Registration as TNFD Early Adopter

The NGK Group has endorsed the efforts of the Taskforce on Nature-related Financial Disclosures (TNFD) and in January 2024, we also registered as a TNFD Early Adopter. We have pledged to comprehensively disclose information related to nature in line with recommendations by 2026.
In FY2024, we disclosed the results of analysis based on the LEAP approach that we had already implemented by the previous fiscal year.

Information Disclosure Based on TNFD Recommendations ›

Nature Conservation Activities for Biodiversity

Survey of Organisms on Land Owned by NGK

The NGK Group has conducted periodic biological surveys on land it owns. We have been able to find a diverse array of organisms, and have not discovered any invasive species that would require swift action. This confirms that the land is being managed appropriately. We have also posted the survey results on a panel so that people will be aware of its biodiversity.

Volunteer Activities by Employees

NGK Group sites inside and outside of Japan carry out social contribution activities in cooperation with local governments and NPOs. Some of these activities help to protect biodiversity.

Coastal Cleanup at NGK Ishikawa Plant and NGK CERAMIC DEVICE Ishikawa Plant

The NGK Ishikawa Plant and NGK CERAMIC DEVICE Ishikawa Plant have teamed up with local resident to clean up the Neagari coastline in Nomi, Ishikawa Prefecture. Eighty employees participated in 2023. Lately, environmental pollution from oceanic plastic waste has become an international concern. Not only is it an eyesore on coastlines, but its impact on ecosystems has become a grave problem. Against the backdrop of such problems, every year we participate in Ishikawa Prefecture's coastal protection initiative Clean Beach Ishikawa.

Coastal cleanup

(NGK Ishikawa Plant and NGK CERAMIC DEVICE Ishikawa Plant)

Forestry Activities of NGK FILTECH

Twenty-five employees and family members of NGK FILTECH (Chigasaki, Kanagawa) carried out forestry activities in the Yadoriki Watershed Forest (Matsuda, Kanagawa) managed by Kanagawa Prefecture, as part of the Kanagawa Reforestation 50 Year Plan endorsed by NGK FILTECH.
In September 2022, NGK FILTECH signed a five-year agreement to be a reforestation partner and contribute to forest conservation and restoration efforts in Kanagawa Prefecture. As such, it is providing support for forest maintenance and other expenses. Under the guidance of a forest instructor, participants listened to explanations about the history of the Yadoriki Watershed Forest, as well as the plants and animals that live there, and learned about the importance of forest conservation and restoration.

Forestry Activities in the Yadoriki Watershed Forest (NGK FILTECH)

Mangrove Planting by NGK CERAMICS (THAILAND)

NGK CERAMICS (THAILAND) planted mangroves in Chonburi Province in eastern Thailand. Mangroves not only absorb CO_2, but also protect biodiversity by acting as a habitat for various animals. Moreover, they help prevent coastal erosion, meaning that planting mangroves can help increase green areas. Through activities like these, we aim to make our employees aware of the importance of nature conservation and ecosystem preservation, while also helping to protect the environment.

Mangrove planting (NGK CERAMICS (THAILAND))

Participation in Initiatives Related to Biodiversity and Certification by External Organizations

NGK Minnano Mori Mizunami (Forest for Everyone in Mizunami) Certified by Ministry of the Environment as a Nationally Certified Sustainably Managed Natural Site

NGK Minnano Mori Mizunami is an NGK owned forest located near one of our Group companies. In March 2024, it was certified by the Ministry of the Environment as a Nationally Certified Sustainably Managed Natural Site. A Nationally Certified Sustainably Managed Natural Site, is an area certified by the government of Japan as an area where biodiversity is being conserved through private sector initiatives.

自然共生サイト認定
30by30

Reforestation Activities “NGK Minnano Mori Mizunami” [Environment, Community Relations] ›

Certified as an Aichi Biodiversity Company

In November 2023, NGK was certified as an Aichi Biodiversity Company under the Aichi Biodiversity Company Certification Program (Aichi Prefecture). The Aichi Biodiversity Company Certification Program is a program run by Aichi Prefecture that seeks to promote corporate efforts to conserve biodiversity by certifying companies which are implementing excellent initiatives.

あいち生物多様性
認証企業

Endorsement of the Keidanren Initiative for Biodiversity Conservation

In January 2022, we endorsed the Keidanren Initiative for Biodiversity Conservation. The Keidanren Initiative for Biodiversity Conservation sets out a resolution and action guidelines for companies and organizations to protect biodiversity.

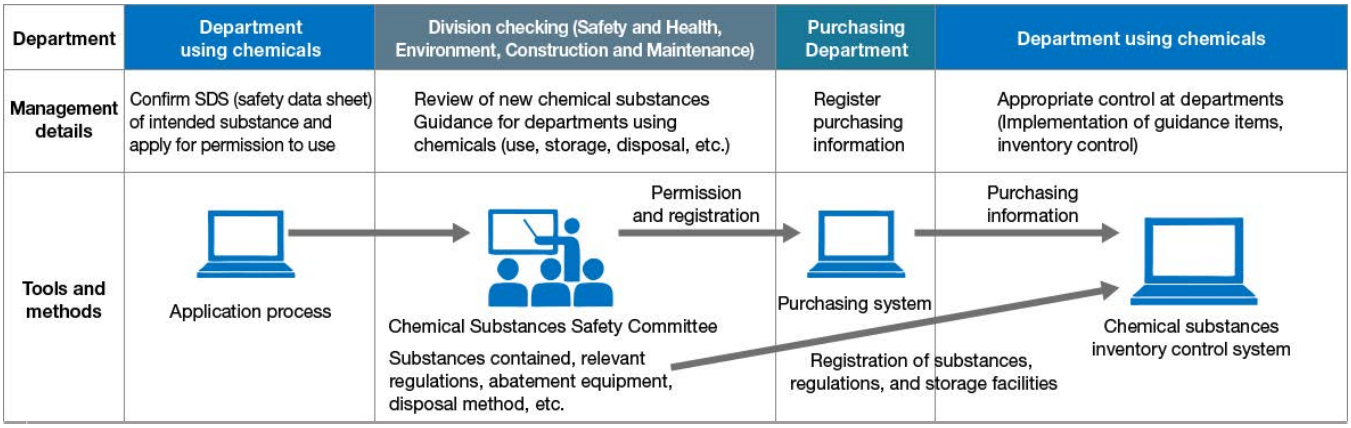
Keidanren
Initiative for
Biodiversity

Environmental Pollution Prevention

Chemical Management

NGK abides by laws, guidelines, and other rules on chemical substances by maintaining a proper level of management for chemicals, and constantly striving to improve this level. Before new chemicals are used by each department, the Chemical Substances Safety Committee determines the pros and cons of using these chemicals and provides confirmation and guidance concerning what precautions must be taken for their usage and disposal. For chemicals that have already been used in the department, the site's chemical substances committee and chemical substances patrol team determine and confirm the state of chemical management and provide necessary guidance. We also follow information regarding changes in chemical substance-related regulations and share this within the group to ensure proper chemical substance management policies are implemented.
Group companies inside and outside Japan survey and understand regional rules and regulations so that chemical substances can be properly managed.

Chemical Management Flowchart



Commitment Concerning Hazardous Substances

The NGK Group aims to reduce the amount of hazardous substances used, in accordance with the NGK Group Environmental Policy. Regarding raw materials, we present our suppliers with a hazardous materials list, and require that they comply with the hazardous substances management stipulated by the NGK Group Supplier Code of Conduct and the NGK Group Green Procurement Standard.

NGK Group Environmental Policy ›

NGK Group's Supply-Chain CSR Guideline

NGK Group's Green Procurement Standard

Reducing Emissions of Hazardous Waste

In order to comply with statutory deadlines, we conduct thorough investigations into PCB-containing waste at NGK and our Group companies, then proceed sequentially with extraction, storage, and disposal. Disposal is outsourced to, and properly handled by, contractors who hold PCB disposal permits.

Atmospheric Emissions Control

The NGK Group manages a database of approximately 7,000 pieces of equipment, in accordance with the Act on Rational Use and Appropriate Management of Fluorocarbons. And we curb undue emissions by centralizing management information about things like simple inspections, periodic inspections, maintenance, and leaks.
We comply with legal limits on soot emissions from facilities through periodic measurement in accordance with laws and regulations, and constant monitoring of critical items. Moreover, when elevated photochemical oxidant levels cause photochemical smoke warnings to be issued, the NGK Group registers with Aichi Prefecture as a cooperative factory and conduct measures to reduce emissions.

Wastewater Management

To avoid impacts on people's health and living environments, we have set our own internal standards with respect to wastewater to supplement the standard compliance values set by laws and ordinances. These trigger alarms or shutoff at or below levels required by wastewater standards. Moreover, we perform management beforehand to ensure that even in cases of emergency, levels do not surpass regulatory standard values.

Products / Services Contributing to Environmental Protection

The NGK Group regards contributing to society through our business activities to be one of our most important missions. We leverage the technology we have cultivated for more than a century since our company was founded, to develop and provide products and technologies that contribute to the global environment.

Developing and Distributing Products/Services Contributing to Environmental Protection

The fifth 5-Year Environmental Action Plan, which began in FY2021, establishes a goal of increasing the registration of carbon neutral products and services among our products contributing to environmental protection. We have registered ENA ELECTRIC POWER and ABASHIRI ELECTRIC POWER, which have been using NAS batteries to provide stable renewable energy supply, as service business companies contributing to regional carbon neutrality. Moreover, in FY2023, we registered new AMB and DCB substrates for power modules needed by the power units in electric vehicles.
We now offer a lineup of 11 products/services contributing to environmental protection. Five of these products/services contributing to environmental protection are related to carbon neutrality. Going forward, we plan to follow up on our NAS batteries by focusing on developing new carbon neutral products and providing services, such as Zinc rechargeable battery, and CO_2 separation membranes which are expected to contribute to Carbon Capture and Utilization/Carbon Capture and Storage (CCU/CCS).

FY2023 Products/Services Contributing to Environmental Protection

Sales ratio: 64%

Our Definition of Products/Services Contributing to Environmental Protection

1) Items recognized or certified by third party organizations

2) Items that help limit or reduce the impact on the Earth's environment

3) Items that help reduce the impact on the local environment

Development and Creation of Products/Services Contributing to Environmental Protection

System for Considering ESG When Designing Products

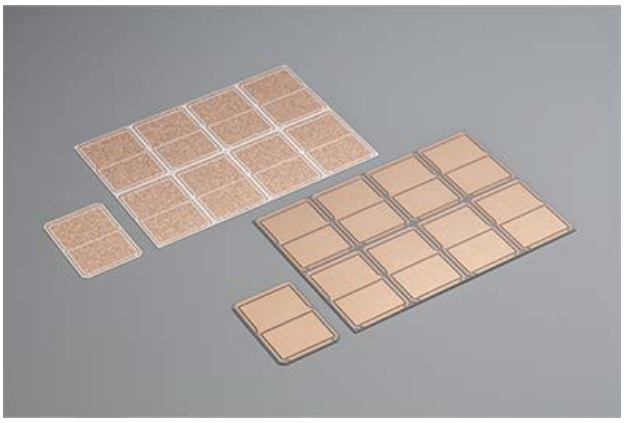
We develop and design our products and services in accordance with the NGK Group Corporate Business Principles and Code of Conduct. We also work to comply with the requirements of our customers and supply chain. And in our Environmental Policy, which is a requirement of the environmental management system stipulated in international standard ISO 14001, we clearly state that we promote the development and proliferation of products/services contributing to environmental protection as part of our environmental/social contribution. Moreover, we confirm the progress of these initiatives through periodic internal audits and third-party audits of our environmental management system.

Contributing to Carbon Neutrality

AMB and DCB Substrates for Power Modules

(CN-related products)

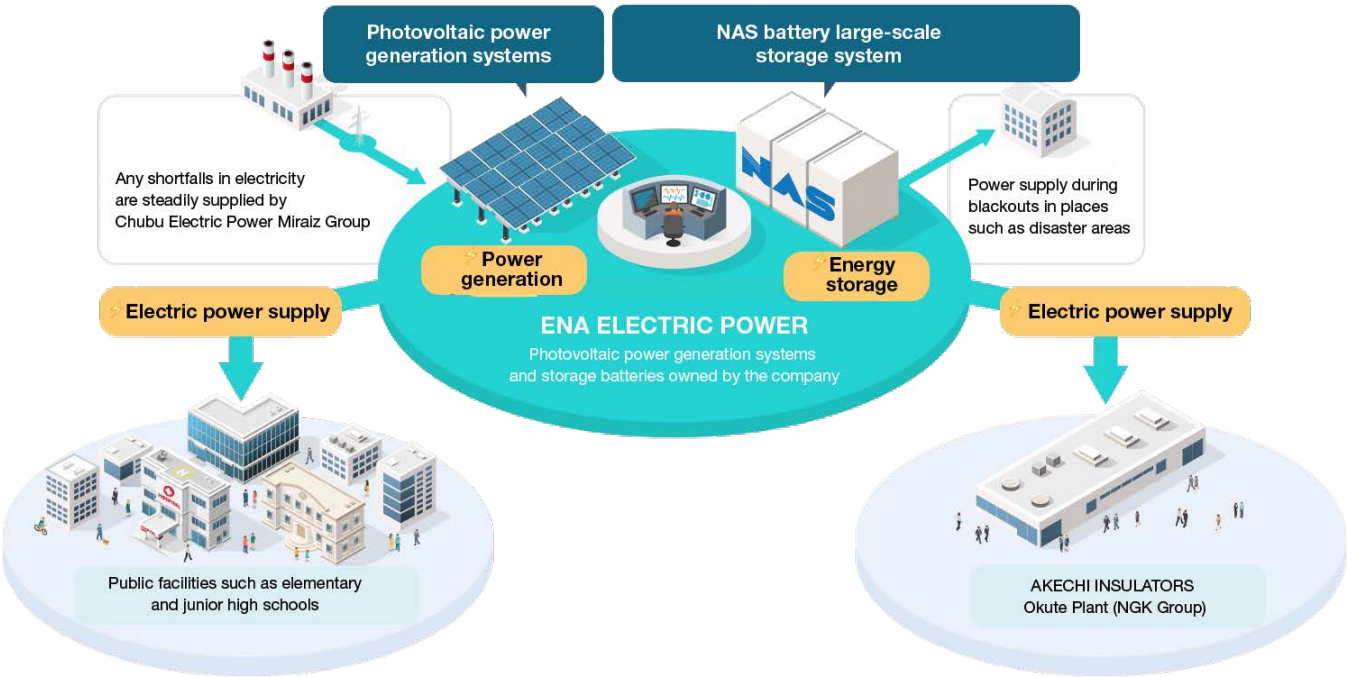
AMB and DCB substrates are products used in power modules for motor drive control and generator power conversion control. Their role is to dissipate heat generated by the semiconductor element by conveying it to the cooler. NGK's AMB and DCB substrates for power modules achieve high reliability and excellent heat discharge characteristics, by means of our unique bonding technology. They maximize the performance of power semiconductors. As the switch to EVs makes progress worldwide, we expect this product to contribute to carbon neutrality through greater utilization in EVs and HEVs. We will help to solve societal issues through our unique ceramic technologies.



Local Renewable Energy Electric Power Supply Service by ENA ELECTRIC POWER and ABASHIRI ELECTRIC POWER

(CN-related services)

In April 2021, the city of Ena, Chubu Electric Power Miraiz, and NGK established ENA ELECTRIC POWER. ENA ELECTRIC POWER installed photovoltaic power generation systems and NAS batteries in empty lots and the rooftops of public facilities in Ena. By supplying electricity to public facilities and AKECHI INSULATORS of the NGK Group, the systems are contributing to the energy independence and carbon neutrality of Ena.
Moreover, in April 2022, NGK and the city of Abashiri together established ABASHIRI ELECTRIC POWER to supply the same kind of locally produced renewable energy.



NAS Batteries

(CN-related products)

The widespread adoption of renewable energy sources that do not use fossil fuels or emit carbon dioxide (CO_2) is underway. Sodium Sulfur (NAS) Batteries can help stabilize the grid by charging and discharging to absorb the fluctuations in power output from wind and solar power generation due to natural phenomena.
In addition, as renewable energy use increases, it becomes more challenging to balance electrical supply with demand due to factors such as excess electrical power at different times or seasons. NAS batteries can use their large capacity to balance supply and demand by storing excess power, helping to support the expansion of renewable energy.

ENA ELECTRIC POWER, Yoshida Power Plant

Output: 720 MW Discharge capacity: 5000 MWh Operational record: more than 250 locations

Wavelength Control Drying System

(CN-related services)

Our wavelength control drying system uses an original heating unit developed by NGK to accelerate solvent drying.
This system uses the selective irradiation of specific infrared wavelengths effective for evaporation to dry materials in 1/2 to 1/3 the time required by conventional drying methods which use heat. Electricity consumption is also cut by 30 to 50%. Binder segregation, which indicates deviations in density due to the drying of the internal components of the coatings, is also curtailed by 30 to 40%.

Preventing Environmental Pollution

HONEYCERAM

HONEYCERAM are ceramic substrates for automotive catalytic converters for purifying automobile exhaust gases of hazardous constituents. They have a catalyst which detoxifies hazardous substances through a chemical reaction, and a honeycomb structure that improves their purifying abilities by increasing the contact area with exhaust gases.
Since mass production began in 1976, we have produced a cumulative total of over 1.8 billion units. These ceramic products have become indispensable to the purification of automotive exhaust gases. The HONEYCERAM manufactured by NGK can reduce nitrogen oxide (NOx)*1 emissions by 4 million metric tons per year. This is equivalent to roughly double the annual amount of NOx*2 emissions in Japan.

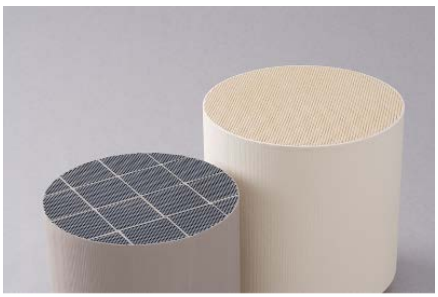
* 1 Assuming new cars not equipped with exhaust gas systems are equipped with the same systems

* 2 Source: OECD Environment Statistics (2012)

NOx reduction of over 4 million tons/year

Diesel Particulate Filters (DPFs)

DPFs are porous ceramic filters fitted to the exhaust systems of diesel vehicles. Using micropores to securely capture particulate matter (PM) purifies the exhaust gas of diesel vehicles and greatly contributes to reducing atmospheric pollution. NGK is the only manufacturer who mass produces two types, cordierite and silicon carbide. And we are further developing our ceramic technologies for diesel vehicles.



Removes up to 99% of PM

Gasoline Particulate Filters (GPFs)

GPFs are ceramic filters that remove the particulate matter emitted by gasoline engines.
We have succeeded in developing GPFs based on the technology behind particulate matter (PM) removal filters for diesel engines (DPFs). We combined this technology with proprietary micropore creation and control technologies to achieve both high PM capture efficiency and low pressure loss (low fuel consumption and high power output). In 2012, we became the first in the world to put GPFs into practical use, and we began full-scale mass production in 2016.
Going forward, we expect demand for GPFs to increase as automotive emissions regulations are strengthened worldwide. We are also strengthening our manufacturing system to boost production capacity in response to increased demand.

In-Vehicle High-Precision NOx Sensors

The world's first in-vehicle sensor that can precisely measure nitrogen oxide (NOx) concentration in exhaust gases in real time. It measures the concentration of NOx in exhaust gasses at a ppm (parts per million) level, catching even minute amounts of NOx. It precisely controls the exhaust gas purification equipment in diesel vehicles to reduce the amount of NOx emitted, and promote the spread of clean diesel vehicles.

Low-Level Radioactive Waste Treatment Systems

NGK produces various equipment that employs our proprietary processing technology and exhaust gas dust removal technology, using high performance filters, to safely process low-level radioactive waste generated by nuclear power facilities. We have delivered these to nuclear power stations and related research facilities all around Japan.
Our broad engineering capabilities span design, manufacturing, and construction. These combined with long-term maintenance support, allow us to achieve stable, advanced radiation removal that contributes to the safe operation of nuclear facilities.
We are also working to develop systems for processing the various new waste generated as aging nuclear reactors are shut down and dismantled.

Importance of treating radioactive waste

When it comes to treating and disposing of the waste generated in the radiation control areas of nuclear power plants and the like, preventing the release or leakage of radioactive material is of the highest importance. It must be treated and disposed of in a different manner to general waste.

Micro-Lenses for Ultraviolet LEDs

Micro-lenses for ultraviolet LEDs are quartz glass lenses which NGK has developed for use with the ultraviolet LEDs intended to replace mercury lamps. Ultraviolet light sources are seeing widespread use in applications such as sterilization of water and air. Currently, such applications use mercury lamps. But in light of new laws and regulations based on the Minamata Convention on Mercury, their use may be banned in the future. This is driving interest in ultraviolet LEDs, which do not use mercury. Our micro-lenses for ultraviolet LEDs feature a cavity (space) to hold the ultraviolet LED chip. This increases the efficiency of the ultraviolet LED while reducing its cost.

Environmental Labeling and Declarations

Since many of the products handled by the NGK Group are B2B products, they are not subject to environmental labelling. However, we support the requirements of each customer.

Material Balance

Category	Substance	FY2019		FY2020		FY2021		FY2022		FY2023		Unit
		Consolidated	Non-consolidated	Consolidated	Non-consolidated	Consolidated	Non-consolidated	Consolidated	Non-consolidated	Consolidated	Non-consolidated	
INPUT	Electric power	0.95	0.25	0.88	0.22	0.98	0.23	0.94	0.23	0.95	0.22	TWh
	Gas	1.65	0.23	1.41	0.20	1.66	0.19	1.50	0.20	1.42	0.19	TWh
	Petroleum	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	TWh
	Raw materials	15	3	14	3	16	2	15	3	14	3	10^4 metric tons
	Recycled materials	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	10^4 metric tons
	PRTR-listed substances	589	236	506	188	447	186	511	160	963	176	Metric tons
	Water withdrawal	4.33	1.55	3.78	1.45	4.37	1.41	4.14	1.20	4.23	1.31	Million m^3
OUTPUT	Energy-origin CO_2	87	16	76	13	63	12	59	13	59 (59☑)	14☑	10^4 metric tons of CO_2
	Energy-origin CO_2 (including effects of CN LNG)*	-	-	-	-	62	10	56	10	56	11	10^4 metric tons of CO_2
	Other greenhouse gases	1	0	0	0	0	0	0	0	1	0	10^4 metric tons of CO_2
	CO_2 (non-energy origin CO_2)	0	0	0	0	0	0	0	0	0	0	10^4 metric tons of CO_2
	CH_4	0	0	0	0	0	0	0	0	0	0	10^4 metric tons of CO_2
	N_2O	0	0	0	0	0	0	0	0	0	0	10^4 metric tons of CO_2
	HFC	0	0	0	0	0	0	0	0	0	0	10^4 metric tons of CO_2
	PFC	0	0	0	0	0	0	0	0	0	0	10^4 metric tons of CO_2
	SF_6	0	0	0	0	0	0	0	0	0	0	10^4 metric tons of CO_2
	VOC	68	0	83	0	77	1	107	1	88	4	Metric tons
	PRTR-listed substances (emissions into atmosphere)	76	3	89	3	84	2	110	2	92	5	Metric tons
	Discarded materials	5	1	5	1	5	1	5	1	5	1	10^4 metric tons
	Recycled	4	1	4	1	4	1	4	1	4	1	10^4 metric tons
	Disposed of externally	1	0	1	0	1	0	1	0	1	0	10^4 metric tons
	Water discharge	3.14	1.40	2.53	1.09	2.74	1.03	2.68	0.80	2.71	0.86	Million m^3
	PRTR-listed substances (discharge into bodies of water)	1	1	0	0	1	1	1	1	1	1	Metric tons
	Scope 1 (energy-origin CO_2)	31	4	26	4	31	4	28	4	27 (27☑)	4☑	10^4 metric tons of CO_2
	Scope 1 (energy-origin CO_2) (including effects of CN LNG)*	-	-	-	-	29	2	25	1	24	1	10^4 metric tons of CO_2
	Scope 2 (energy-origin CO_2)	56	11	49	10	33	9	31	9	32 (32☑)	10☑	10^4 metric tons of CO_2

☑ The consolidated production bases figures in the parentheses and the non-consolidated figures are values subject to third-party assurance by Deloitte Tohmatsu Sustainability Co., Ltd.
Note: The figures indicating environmental performance in this table have been rounded off for convenience, so the total may not equal the sum of the individual figures.
Note: Discarded materials indicates the sum total of industrial waste and valuable resources.
Note: The figures in the non-consolidated column are the data for NGK production locations (Head Office/Nagoya Site, Chita Site, Komaki Site, Ishikawa Plant).
Note: As with the non-consolidated values, the emission factor for electricity in the consolidated values of Outputs/Energy-origin CO_2 (including effects of CN LNG) and Scope 2 (energy-origin CO_2), has been changed from a fixed value to the actual value from the power company for each fiscal year, beginning in FY2020.
* CN LNG (Carbon Neutral Liquid Natural Gas) is LNG that is offset with CO_2 credits, and thus considered to have no CO_2 emissions. However, we show it as a separate category because it does not qualify for credits under current energy conservation laws.

Material Balance Calculation Basis

INPUT	1. Energy	Electric power	Electric power consumption
		Gas	Amount obtained by converting the consumption volume for each type of fuel into the heat value = Σ (consumption volume of each fuel × unit heating value of each fuel) ÷3,600 MJ/MWh <Unit heating value of fuel> Natural gas : (China) 43.5/38.9/42.5 MJ/Nm^3 *1, (outside China) 43.5/42.5 MJ/Nm^3 *2, City gas: (NGK alone) 45 MJ/Nm^3, (other than for NGK alone) 45/44.8/45 MJ/Nm^3 *1 Others: according to the Act on Promotion of Global Warming Countermeasures
		Petroleum	Amount obtained by converting the consumption volume for each type of fuel into the heat value = Σ (Consumption volume of each fuel × Unit heating value of each fuel) ÷3,600 MJ/MWh <Unit heating value of fuel> According to the Act on Promotion of Global Warming Countermeasures *1 Data to left side of "/ "is for FY2019 to FY2020, middle is for FY2021 to 2022, right is from FY2023 *2 Data to left side of "/" is for FY2019 to FY2022, right is from FY2023
	2. Water withdrawal	Total tap water, industrial water, groundwater, and rainwater	
	3. PRTR-listed substances	Total quantity of Japan's PRTR Type 1 listed substances handled	
	4. Raw materials	Total amount of raw materials used to manufacture products	
OUTPUT	5. Energy-origin CO_2 emission volume	Energy-origin CO_2 emission volume = Σ (Consumption of each type of energy × CO_2 conversion factor of each type of energy) <CO_2 conversion factor of energy>	
		Electric power	Japan: Emission coefficient for each electric utility adjusted in Japan based on the Act on Promotion of Global Warming Countermeasures; US (other than NMC, FMI California, NL): Green-e value; US (NMC, FMI California, NL): Green-e value / value published by electric company*1; Belgium, France: AIB value; Australia: Australian National Greenhouse Accounts value; Poland: AIB value / Poland National Centre for Emission Management value*1; China: IEA value / Ministry of Ecology and Environment of the Republic of China value / IEA value*2, Other countries : IEA values
		Fuel	Natural gas: (China) 2.22/2.16/2.17 $kgCO_2/Nm^3$ *2, (Countries other than China) 2.22/2.17 $kgCO_2/Nm^3$ *3, City gas: (NGK alone)2.244/2.29/2.27 $kgCO_2/Nm^3$ *2, (other than for NGK alone) 2.23/2.27 $kgCO_2/Nm^3$ *3 Others : According to the Act on Promotion of Global Warming Countermeasures *1 Data to left side of "/" is for FY2019 to FY2020, right is from FY2021 *2 Data to left side of "/ "is for FY2019 to FY2020, middle is for FY2021 to 2022, right is from FY2023 *3 Data to left side of "/" is for FY2019 to FY2022, right is from FY2023
	6. Emission volume of other greenhouse gases	Emission volume of other greenhouse gases (tCO_2) = volume of activity × emission coefficient × Global warming potential <Global warming potential> According to the Act on Promotion of Global Warming Countermeasures	
	7. Water discharge	Total volume of water discharged. However, this does not include the rainwater discharge volume.	
	8. PRTR-listed substances	Discharge into bodies of water: Total amount of Japan's PRTR Type 1 listed substances discharged into public bodies of water Emissions into atmosphere: Total amount of Japan's PRTR Type 1 listed substances emitted into the atmosphere	
	9. Total amount of discarded materials generated	Total amount of discarded materials generated = Externally disposed amount*1 + Externally recycled amount Recycled amount: Externally recycled amount = Paid disposal*2 + Valuable amount (selling off) *1 Externally disposed amount: Direct disposal by landfill, or simple incineration *2 Paid disposal: Outsourcing disposal and paying for recycling*	
	10. Scope 1 through 3	Scope 1	Direct emissions of greenhouse gases by the reporting company (generated from industrial processes or the burning of fuel)
		Scope 2	Indirect emissions of greenhouse gases by the reporting company resulting from the use of electricity, steam, or heat purchased from other companies
		Scope 3	All other indirect emissions of greenhouse gases (not included in Scope 1 or 2) that occur in the reporting company's value chain

GHG Emissions

Item	Category	Division	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
GHG emissions (Scope1+2: Energy-origin CO_2)*1	-	Including effects of CN LNG*2	87	76	62	56	56	10^4 metric tons of CO_2
GHG emissions (Scope 1: Energy-origin CO_2)*1	-	Including effects of CN LNG*2	31	26	29	25	24	10^4 metric tons of CO_2
GHG emissions (Scope 2: Energy-origin CO_2)*1	-	-	56	49	33	31	32	10^4 metric tons of CO_2
Basic unit per net sales (Scope1+2: Energy-origin CO_2)*1	-	Including effects of CN LNG*2	198	167	120	100	96	Metric tons of CO_2 per 100 million yen
GHG emissions (Scope3) (FY2019-FY2020: Non-consolidated, FY2021-FY2023: Consolidated)	Total		97.7	89.3	344.9	351.9	327.0	10^4 metric tons of CO_2
	1	Purchased products and services	84.2	77.0	178.8	192.2	188.1	10^4 metric tons of CO_2
	2	Capital goods (capital investment)	9.9	9.0	13.4	13.9	15.7	10^4 metric tons of CO_2
	3	Energy	1.6	1.5	8.6	8.2	8.1	10^4 metric tons of CO_2
	4	Transport (upstream)	1.4	1.3	18.8	11.1	10.8	10^4 metric tons of CO_2
	5	Waste	0.2	0.2	1.2	1.0	1.0	10^4 metric tons of CO_2
	6	Business trips	0.1	0.1	0.3	0.3	0.3	10^4 metric tons of CO_2
	7	Employee commutes	0.2	0.2	0.9	0.9	0.8	10^4 metric tons of CO_2
	8	Leased assets (upstream)	-	-	-	-	-	10^4 metric tons of CO_2
	9	Transport (downstream)	-	-	-	-	-	10^4 metric tons of CO_2
	10	Processing of sold products	-	-	-	-	-	10^4 metric tons of CO_2
	11	Use of sold products	-	-	122.6	123.9	101.9	10^4 metric tons of CO_2
	12	Disposal of sold products	-	-	0.4	0.4	0.4	10^4 metric tons of CO_2
	13	Leased assets (downstream)	-	-	-	-	-	10^4 metric tons of CO_2
	14	Franchises	-	-	-	-	-	10^4 metric tons of CO_2
	15	Investment	-	-	-	-	-	10^4 metric tons of CO_2
Other GHG emissions*1	Total		0	0	0	0	1	10^4 metric tons of CO_2
	-	CO_2 (non-energy origin CO_2)	0	0	0	0	0	10^4 metric tons of CO_2
	-	CH_4	0	0	0	0	0	10^4 metric tons of CO_2
	-	N_2O	0	0	0	0	0	10^4 metric tons of CO_2
	-	HFC	0	0	0	0	0	10^4 metric tons of CO_2
	-	PFC	0	0	0	0	0	10^4 metric tons of CO_2
	-	SF_6	0	0	0	0	0	10^4 metric tons of CO_2

*1 The scope is consolidated.
*2 CN LNG (Carbon Neutral Liquid Natural Gas) is LNG that is offset with CO_2 credits, and thus considered to have no CO_2 emissions. However, we show it as a separate category because it does not qualify for credits under current energy conservation laws.

Consumption of Each Energy

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Electric power	0.95	0.88	0.98	0.94	0.95	TWh
Gas	1.65	1.41	1.66	1.50	1.42	TWh
Petroleum	0.02	0.02	0.02	0.02	0.02	TWh
Basic unit per net sales	596	513	522	442	413	MWh per 100 million yen

The scope is consolidated.

Conservation of Water Resources

Item		FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Water withdrawal	Tap water/industrial water	3.710	3.135	3.720	3.494	3.616	Million m^3
	Groundwater	0.620	0.640	0.614	0.648	0.608	Million m^3
	Rainwater	0.001	0.002	0.002	0.001	0.002	Million m^3
	Total	4.331	3.777	4.336	4.143	4.226	Million m^3
Water discharge	Rivers	0.828	0.734	0.733	0.705	0.681	Million m^3
	Lakes	0.000	0.000	0.000	0.000	0.000	Million m^3
	Sea	1.618	1.201	1.218	1.152	1.238	Million m^3
	Sewerage	0.419	0.376	0.458	0.507	0.496	Million m^3
	Factory complex processing	0.241	0.207	0.238	0.233	0.243	Million m^3
	Other	0.013	0.017	0.057	0.079	0.054	Million m^3
	Total	3.140	2.534	2.704	2.677	2.712	Million m^3
Amount of water consumption		1.191	1.243	1.632	1.466	1.514	Million m^3
Volume recycled		0.090	0.066	0.063	0.077	0.102	Million m^3
Recycling rate*		2.0	1.7	1.5	1.9	2.4	%

The scope is consolidated.
* (Recycling rate) = (Volume recycled) / (Total water withdrawal)

Raw Materials

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Raw materials	15	14	16	15	14	10^4 metric tons
Recycled materials	0.4	0.4	0.4	0.5	0.4	10^4 metric tons

The scope is consolidated.

Chemical Management System

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
VOC	68	83	77	107	88	Metric tons
PRTR-listed substances (emissions into atmosphere)	76	89	84	110	92	Metric tons
PRTR-listed substances (discharge into bodies of water)	1	0	1	1	1	Metric tons

The scope is consolidated.

Discarded Materials

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Discarded materials	5	5	5	5	5	10^4 metric tons
Recycled	4	4	4	4	4	10^4 metric tons
Disposed of externally	1	1	1	1	1	10^4 metric tons
Plastic recycled + disposed of externally	-	-	-	-	0.1	10^4 metric tons
Basic unit per net sales	12.5	10.3	10.5	8.4	8.3	Metric tons per 100 million yen
Reduction rate against BAU*	24	24	26	31	31	%

The scope is consolidated.
* This is the improvement rate in the basic unit for production output based on FY2013.

Toxic Materials

Item		FY2019	FY2020	FY2021	FY2022	FY2023	Unit
PCB waste	Considered to be disposed	26	166	39	179	104	Units
	Disposed amount	5,097	21,999	11,480	28,805	470	kg

The scope is consolidated.

Products and Services Contributing to Environmental Protection

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Ratio of sales of products and services contributing to environmental protection of the sales of all products and services	59	57	59	59	64	%

The scope is consolidated.

Environmental Accounting

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Environmental conservation costs/Capital investment*1	13.6	26.8	9.4	19.4	28.6	100 million yen
Environmental conservation costs/Expenditures*1	29.8	35.0	41.4	31.8	50.0	100 million yen
Economic benefits*1	5.7	4.5	6.9	7.7	7.2	100 million yen
Cost-effectiveness*1 *2	19.2	12.9	16.7	24.1	14.4	%
CO_2 eco-efficiency*3 *4 *5	109	122	187	226	233	%
Discarded materials eco-efficiency*3 *4 *6	146	176	172	216	217	%

*1 The scope is NGK and domestic group companies
*2 (Cost-effectiveness) = (Economic benefits) / (Expenditures)
*3 The scope is consolidated.
*4 FY2013 = 100%
*5 (CO_2 eco-efficiency) = (Net sales) / (CO_2 emissions)
*6 (Discarded materials eco-efficiency) = (Net sales) / (Amount of discarded materials)

Environmental Management System

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
NGK	4	4	4	4	4	Number of bases certified
Domestic Group	22	18	19	19	19	Number of bases certified
Overseas Group	21	21	21	21	21	Number of bases certified

New manufacturing sites that have been in operation for less than two years are excluded.

Environmental Audits

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Significant findings	0	0	0	0	0	Cases

The scope is consolidated.

Environmental Risk Management

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Significant findings	0	0	0	0	0	Cases

The scope is consolidated.

External Recognition of Environmental Performance

Item	FY2019	FY2020	FY2021	FY2022	FY2023
CDP-Climate Change	A-	B	B	A-	A-
CDP-Water Security	B-	B	B	A-	B
CDP SUPPLIER ENGAGEMENT	B	B	A	A-	B

The scope is consolidated.

Eco Test Certification

Item	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Number of successful examinees	37	73	44	29	43	Persons

The scope is NGK only.

Social

ESG in the NGK Group Social

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Respect for Human Rights

Basic Approach

Concerning respect for human rights within NGK Group business activities, our relationship with employees has been governed by the NGK Group Corporate Business Principles, and our relationship with suppliers has been governed by the NGK Group Supplier Code of Conduct. In April 2021 we established the NGK Group Human Rights Policy as a separate policy on human rights. This not only clarifies our messaging both inside and outside of NGK, but accelerates our efforts to respect human rights.

NGK Group Human Rights Policy ›

NGK Group Corporate Business Principles ›

NGK Group Supplier Code of Conduct

Related Policies and Approaches

Statement on the UK Modern Slavery Act

We have disclosed our UK Modern Slavery Act Statement based on the Modern Slavery Act passed by the United Kingdom in 2015.

UK Modern Slavery Act Statement ›

Respect for the Human Rights of Children

The NGK Group is aware that there are a variety of impacts that corporations can have on children. In addition to signing the UN Global Compact, we support the Children's Rights and Business Principles, respect the rights of children through our business activities, and engage in social contribution activities and other efforts to promote children's rights.

Social Contribution Activities ›

Compliance with Local Labor Laws

The NGK Group complies with the laws of each country and region concerning labor and occupational safety and health.
We have also established a reporting mechanism for whistleblowing and consultation to handle possible violations. Regarding child labor and forced labor, we use sources such as official public documents to confirm the age of candidates before they are hired. To date, we have found no cases of child labor or forced labor through the regular surveys.

NGK Group Supplier Code of Conduct

The NGK Group expects all of our suppliers to comply with our human rights policy in terms of respect for human rights in our supply chains. We also ask them to thoroughly implement the policy using the NGK Group Supplier Code of Conduct. This code gives clear guidance on concrete measures concerning basic human rights, including prohibition of discrimination, forced labor, and child labor, consideration for appropriate wages, working hours, and the like.
We ask all our suppliers to consent to compliance with this code once a year. We also ask suppliers to consent to compliance with this code when starting new transactions.

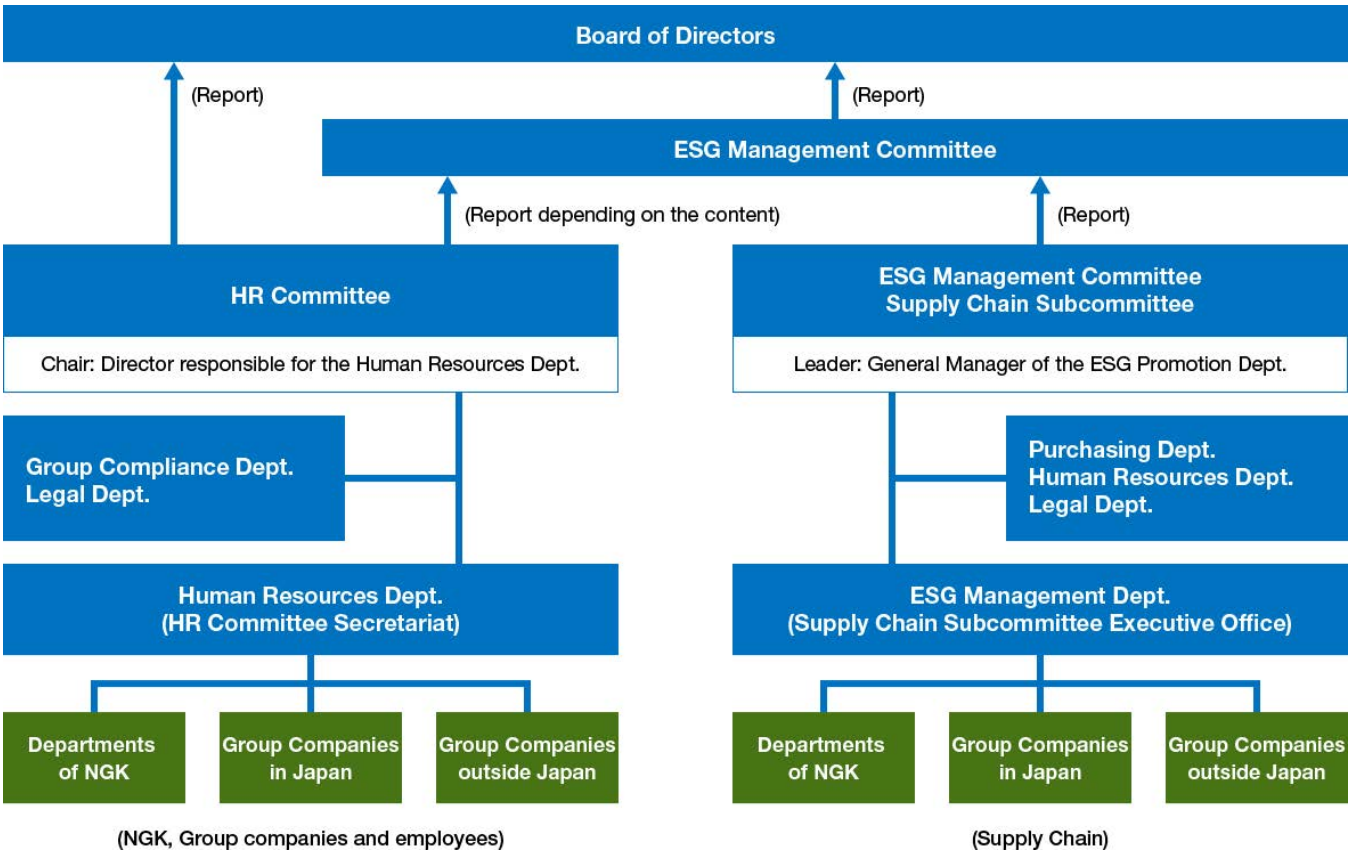
Supply Chain Management ›

NGK Group Supplier Code of Conduct

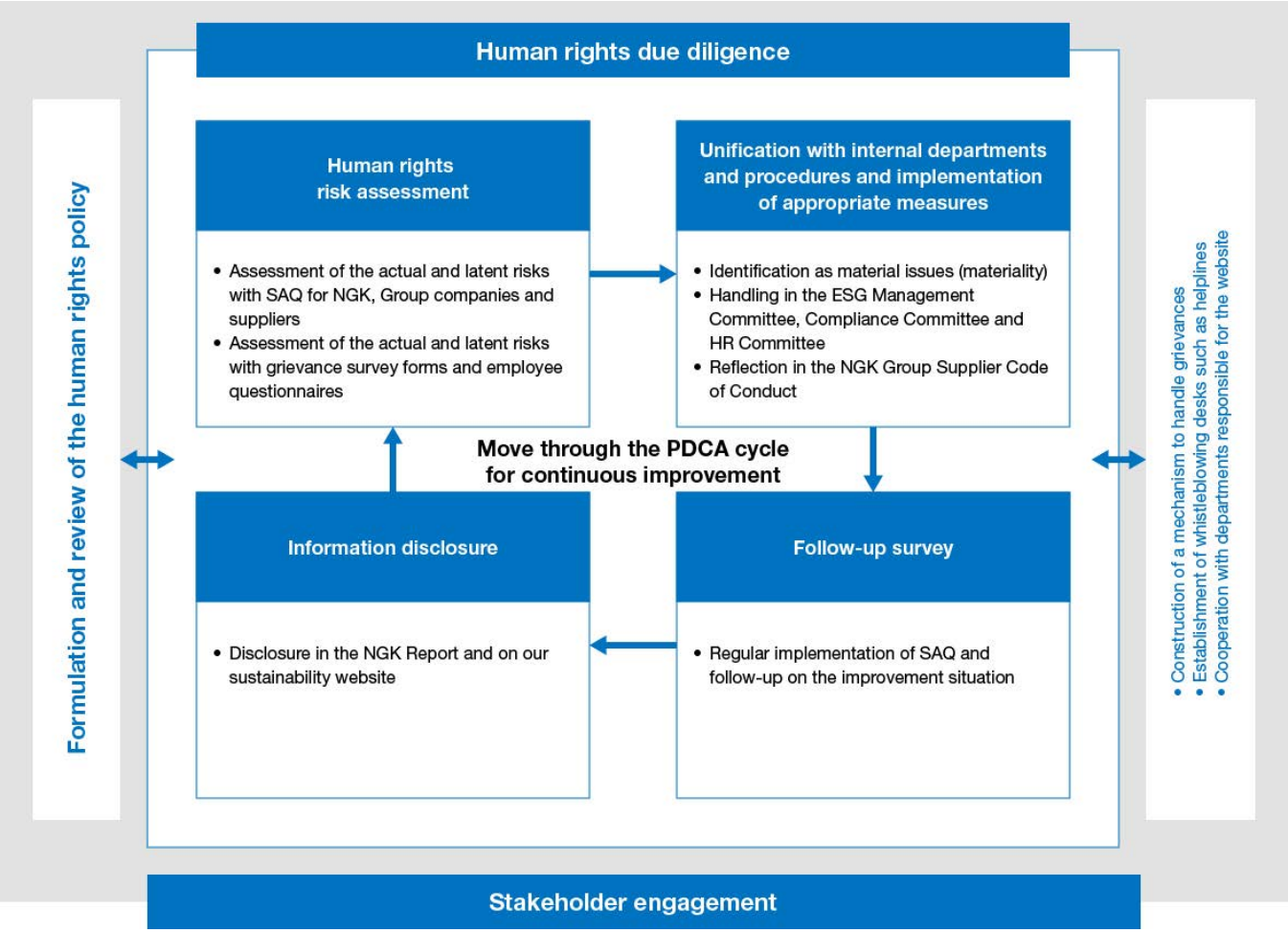
Management System

In April 2020, we established the HR Committee as a cross-sectoral, deliberative body chaired by the director responsible for the Human Resources Department and tasked with ensuring that corporate activities have a stronger focus on human rights and that important personnel issues are addressed by the NGK Group as a whole.
Two committees work to promote initiatives that ensure respect for human rights. For the NGK Group this is the HR Committee, and for our supply chain it is the Supply Chain Subcommittee of the ESG Management Committee. These committees coordinate and cooperate with related committees and departments on such initiatives, according to their content and importance. Meanwhile, the managing director of the HR department regularly reports to the Board of Directors concerning the status of their implementation, and the Board of Directors overseas the status of implementation.

Organizational Structure Chart



Overall Picture of Initiatives for Respect for Human Rights



FY2023 Activities

In FY2023, we focused on the following human rights initiatives.

Implementation Timing	Details of Implementation
(Ongoing from FY2021)	Conducting human rights due diligence surveys (SAQ) for Japanese and overseas suppliers of NGK headquarters
April to June	Investigated human rights related grievances in all Group companies in and outside Japan during the second half of FY2022 (human rights related grievances at NGK headquarters are investigated and recorded on a case-by-case basis)
September	Disclosed Statement on the UK Modern Slavery Act (fiscal year ended March 31, 2023)

Implementation Timing	Details of Implementation
October to November	Investigated human rights-related grievances at Group companies in and outside Japan during the first half of FY2023 (human rights related grievances at NGK headquarters are investigated and recorded on a case-by-case basis)
November to December	Conducted human rights due diligence surveys (SAQ) for primary suppliers of Group companies outside Japan
December 2023 to March 2024	Conducted human rights due diligence surveys (SAQ) for Japanese and overseas suppliers of NGK headquarters
March	Conducted "Business and Human Rights: NGK Group Human Rights Policy" e-learning program

Human Rights Due Diligence

Human Rights Risks Accompanying Group Business Activities

NGK regularly conducts a self-assessment survey based on the RBA* Code of Conduct on ourselves and our Group companies in and outside of Japan. In FY2023, a total of 40 companies including NGK underwent the self-assessment survey with a total of 55 questions in the three categories of labor, health and safety, and ethics. Conducting this survey gives us a comprehensive overview of the business activities in our group and identifies human rights issues.
As a result, no violations of the laws or regulations of each country were found. On the other hand, we confirmed multiple instances of issues which, while legal, do not comply with the RBA Code of Conduct. We recognize that these are human rights issues requiring our attention. Based on that, we will consider our response while taking into account the laws/ordinances, customs and practices of each country.

* Responsible Business Alliance: Focusing primarily on the electronic equipment industry, the RBA establishes standards and conducts audits with the aim of promoting safe working environments, worker protection, and environmental responsibility.

Human Rights Risks to Employees

Concerning human rights risks to employees, we accept reports and queries about human rights through our internal whistleblowing desk, and receive reports from Group companies once every 6 months through the Human Rights Grievance Survey or the Legal Risk Management Report. In FY2023, we received 27 reports related to human rights (harassment, labor-related, etc.) from the entire NGK Group. We are handling these with fact-finding investigations, rectification, instruction, and warnings. Once every two years we also conduct a Corporate Risk Survey (CRS) to identify latent risks.

Human Rights Risks to Supply Chain

For our supply chain, every year we ask all suppliers, including new suppliers, to consent to compliance with the NGK Group Supplier Code of Conduct. Moreover, in FY2023, we conducted a supplier CSR procurement survey at approximately 70 suppliers of our Group companies outside Japan.

NGK Group Supplier Code of Conduct

Supplier Assessment ›

Human Rights Issues Requiring Our Attention

Based on these results, the NGK Group has identified the following as human rights issues requiring our attention. We are now considering our response to them.

- Discrimination and harassment
- Forced labor and child labor
- Working hours and wages
- Freedom of association
- Occupational health and safety
- Human rights issues in our supply chains

Grievance Mechanisms

NGK has established a whistleblowing desk (helpline) which can be used by all officers and employees of NGK and our Group companies in Japan. We have set up internal and external desks to be able to accept anonymous inquiries and reports. At the same time, we are striving to protect those who make inquiries and whistleblowers so that they are not treated unfavorably as a result of making an inquiry or report. We are establishing effective whistleblowing structures in our Group companies outside Japan. For example, our Group companies are establishing mechanisms to receive inquiries and reports which can be used by all officers and employees to suit the actual circumstances in their countries. Moreover, we have established the Supplier Helpline to accept inquiries and reports from suppliers. Together with this, we are capable of receiving inquiries and reports from all our stakeholders through the Contact page on the NGK website.

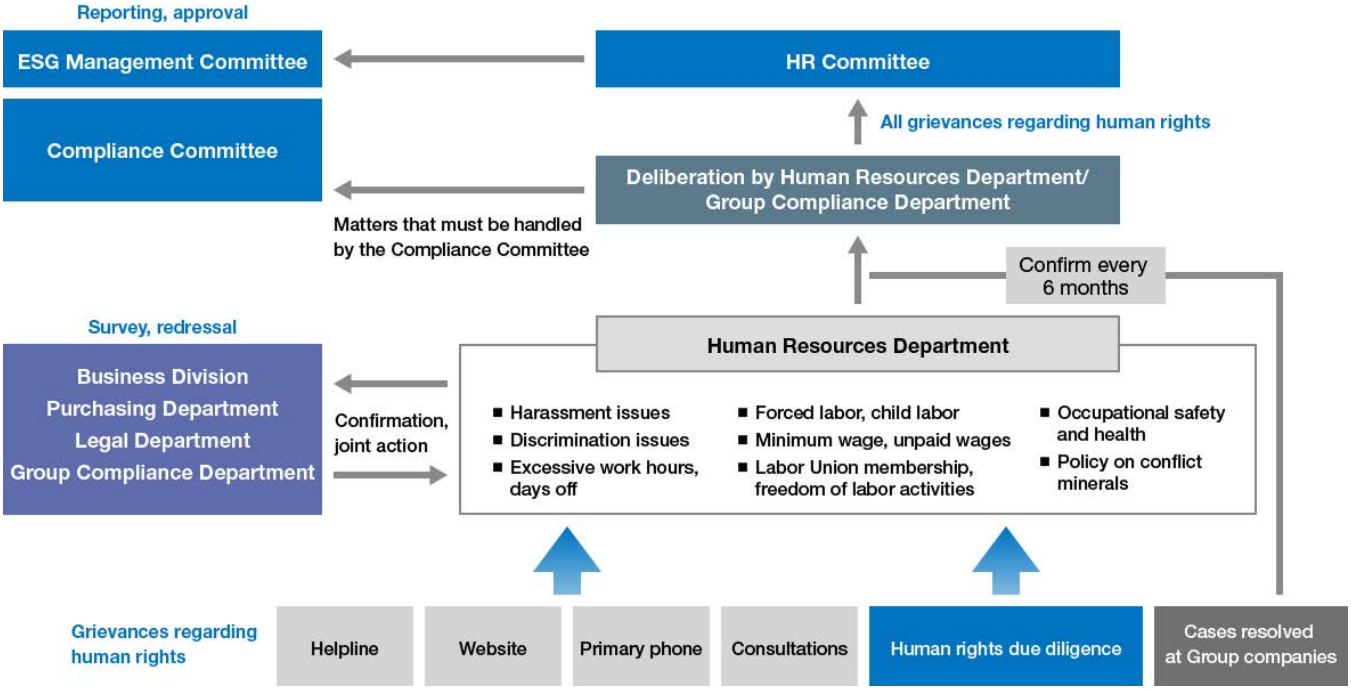
Whistleblowing System ›

Supplier Helpline ›

Contact Page on the NGK Website ›

When we receive an inquiry or report relating to human rights, the Human Resources Department provides remedies for the affected parties if we confirm human rights have been affected upon discussions with the Group Compliance Department and other related departments. Together with this, the Human Resources Department takes corrective and preventative measures. It then makes reports to the Compliance Committee, HR Committee and ESG Management Committee as necessary depending on the degree of importance about our response to those issues.

Grievance Mechanisms and Remediation / Remedy Framework



Education Concerning Human Rights

NGK conducts various types of training, through seminars and e-learning, for executives and all employees, with the goal of improving their level of understanding for respecting human rights in our corporate activities.

Category	Theme	Participants / Applicable Range	Number of Participants	Implementation Timing
Human rights in general	"Business and Human Rights: NGK Group Human Rights Policy" e-learning program Corporate responsibility to respect human rights, human rights related risks, NGK Group Human Rights Policy	All officers and employees working at NGK, and our Group companies in and outside Japan(including contract employees, re-hired employees, re-contracted employees, temporary employees, subcontractors, employees seconded from Group companies and part-time employees)	Views: 4,663 Survey replies: 4,066	March 2023
Human rights in general	Respect for human rights, NGK's initiatives, and ESG risks and opportunities	Newly appointed managers, those promoted within managerial positions, career recruits in managerial positions	128	December 2023
Human rights in general	NGK Group Corporate Business Principles Realization of a sustainable society through business activities, respect for human rights, and thorough compliance	Employees promoted as those in general positions and career recruits with eligible qualifications	409	November 2023 to March 2024
LGBT	"Introduction to LGBT: Aiming for a Worker-friendly Workplace" Basic LGBT knowledge and internal initiatives	New employees	168	April 2023

Category	Theme	Participants / Applicable Range	Number of Participants	Implementation Timing
Harassment	Definitions of workplace bullying and sexual harassment, concrete examples, treatment in workplace regulations, helpline introduction, and promotion of understanding through case studies	New employees, employees promoted as those in general positions, and mid-career recruits with the eligible qualifications	577	April 2023 to March 2024
Harassment	Compliance, workplace bullying and sexual harassment in manufacturing sites	New section chief training	16	July to December 2023
Harassment	Definitions of workplace bullying and sexual harassment, treatment in workplace regulations, and deepening of understanding of examples applicable to harassment and prevention of harassment through multiple case studies	Officers and employees of NGK and Group companies in Japan	778	October 2023 to March 2024

Supply Chain Management

Basic Approach

Our policy hinges on the three principles of Open and Fair, Partnership, and Relationship with Society. In line with this, the NGK Group has established a policy for promoting fair and honest business transactions and helping to ensure prosperous relationships with the suppliers in our supply chain.
In FY2023, we revised our basic purchasing policy into the NGK Group Procurement Policy to codify the details more specifically on its initiatives, while maintaining its existing principles. In 2021 we submitted a Declaration of Partnership Building as advanced by the Cabinet Office Small and Medium Enterprise Agency. We continue to promote partnership with our suppliers as well as fair and honest dealing.

NGK Group Procurement Policy ›

Supply Chain Management Promotion Framework

At NGK, the Purchasing Department is responsible for managing primary suppliers. It also manages secondary suppliers and beyond who provide critical items such as raw materials. We manage approximately 800 suppliers in line with NGK's Supplier Management Regulations.

Promoting CSR Procurement

In response to growing societal demands for CSR in the supply chain, the NGK Group is promoting CSR procurement and sustainable procurement. We select suppliers which have CSR initiatives and ESG Management. And we procure materials and services which consider environmental and social impacts.

History of CSR Procurement

Supplier Code of Conduct

In FY2010, the NGK Group established the NGK Group's Supply-Chain CSR Procurement Guidelines which cover the entire Group.
These guidelines not only clarify NGK's own social responsibilities, but make clear what social responsibilities our suppliers should fulfill. This includes wording about reducing greenhouse gas emissions in the environmental dimension.
In 2013, we integrated the NGK Group Green Procurement Standard, which calls for prioritizing procurement of products and services with a low environmental impact. Thereafter, we added items based on societal changes and new global issues, and in July 2024, we conducted a complete review of the contents and reworked it into the NGK Group Supplier Code of Conduct.
We periodically ask our major suppliers to comply with this code of conduct when starting new projects or continuing current ones.

NGK Group Supplier Code of Conduct

Enhancement of Group-Wide Cooperation and Procurement Capabilities

Within the NGK Group, we work to strengthen the procurement capabilities and ensure good governance for the Group as a whole through a number of approaches, including sharing information among Group companies and undertaking joint initiatives aimed at various procurement matters. Based on each company's purchasing system and transaction situation, we clarify issues and provide support and reinforcement, such as collective purchasing of common materials, sharing cost and supplier information, and introducing domestic supplier management methods to Group companies.
We will continue expanding the use of collective purchasing, standardizing supplier management methods, and developing other approaches that will contribute to improved procurement functions Group-wide, both in terms of cost and governance.

NGK Group Purchasing Liaison Meeting

Introduction of General Indirect Materials Purchasing System

Typically, each department has performed general indirect materials purchasing, using an offline, piecemeal approach. However, in June 2021 we introduced a global transaction network system to centrally integrate indirect materials spending and make it more transparent.
In addition to an expenditure check conducted by the Purchasing Department, we review the supplier, specification, and other details for large-scale expenses based on the available data on a daily basis. In FY2023, we expanded the scope of this review to the outsourcing of highly specialized work, and are further strengthening management and purchasing.

Supplier Assessment

Identifying Important Suppliers

Within NGK, we identify important suppliers from the following point of view.

- Handling of important items: Raw materials and molding molds for main production items* are considered critical items
- Transaction volume: Accounts for 80% or more of raw materials and molds supply for main production items
- BCP: single company supply ratio of 70% or more

As of March 2024, 38 companies (22 Tier 1 companies, 16 Tier 2 companies) are considered important suppliers.

* Main production items: ceramics for purifying automobile exhaust, insulators and related devices for electric power, ceramics for electronic and electrical devices and ceramics for semiconductor manufacturing equipment

New Supplier Assessment

At NGK, when we start working with new suppliers, we rate them from the perspective of QCD (quality, cost, delivery) and stable procurement based on the principles laid out in our Group Procurement Policy of open, fair, and equitable procurement. In order to fulfill our social responsibilities throughout our entire supply chain, we consider an understanding of and agreement with the essential tenets of the NGK Group Supplier Code of Conduct, which includes ESG elements as a requirement for selection as a new supplier.

Existing Supplier Assessment

At NGK, we periodically ask existing suppliers to submit written consent to comply with our NGK Supplier Code of Conduct. And since 2021 we have conducted fact-finding surveys consisting of 114 questions on nine topics, including human rights, labor, and the environment. This allows us to perform a

detailed CSR assessment of each supplier and assess risk according to transaction details. From the perspective of impact on our business, we first conducted these surveys for direct suppliers of NGK. Then we gradually expanded them to the main suppliers of our Group companies in Japan, and in FY2023, to the 66 main suppliers of our Group companies overseas.

Main SAQ Items

Main Items	Details
Corporate Governance	Promotion framework, internal control, BCP framework, internal whistleblower system, information dissemination both internally and externally
Human Rights/Labor	Basic stance; respect for human rights; prohibition and prevention of discrimination/violation; provision of equal opportunities for hiring, training, and career advancement; fair wages, fair implementation of hours and leave; prohibition of forced or child labor; health and safety/health management; freedom of association
Environment	Basic stance; chemical substance management; waste reduction; effective resource utilization (water recycling, raw materials recycling) and preservation; prevention of global warming; biodiversity
Fair Business Practices	Basic stance; appropriate relationship with government and public officials; preventing inappropriate sharing of benefits with related parties; preventing violations of competition law; elimination of relationships with anti-social organizations; protecting intellectual property and copyrights; relief system; prohibition of insider trading and conflict of interest
Quality/Safety	Basic stance; ensuring quality and safety of products and services; appropriate handling of accidents and defective products
Information Security	Basic stance; defending against cyber threats; protecting individual data and privacy; preventing unauthorized use of confidential information
Co-existence of Supply Chain with Local Communities	Basic stance; initiatives concerning conflict minerals; reducing negative influence on local society; initiatives in cooperation with local society towards sustainable development

Communication Activities with Procurement Partners

Explanation of Earnings to Suppliers

In FY2023, NGK's annual earnings presentation for suppliers, which had been conducted online because of the risks posed by the COVID-19 pandemic, was held in-person for the first time in four years. We explained our earnings and materials procurement policy to 117 supplier companies participating on-site (and 80 companies participating online). We also asked for their continued compliance with CSR procurement, and shared information and goals meant to facilitate the continuation and expansion of business throughout our entire supply chain.

Review and Strengthen Communication with Suppliers

NGK is working to strengthen and improve communication in various points throughout the entire supply chain. This includes requesting regular price negotiations to bring about appropriate price pass-through, and reviewing the methods by which emails are sent and received to improve PPAP issues* in IT security.
Moreover, we regularly exchange opinions with suppliers and introduce them to initiatives on themes such as handling problems with harassment, constructing BCP systems, and IT security.
In addition, we are working to discover and resolve problems in the supply chain early on by establishing a supplier helpline system that allows us to field consultations from both inside and outside Japan.

* One problem is that the practice of sending and receiving emails with password protected zip files attached is a hotbed for targeted attacks which exploit email.

Supplier Helpline ›

Visiting and Monitoring Individual Suppliers in Japan and Overseas

In order to ensure procurement from the most appropriate suppliers, NGK visits individual suppliers in Japan and overseas to conduct on-site audits and evaluate their QCD (quality, cost, and delivery) performance in a fair and equitable manner. In FY2023, we conducted quality audits at 41 of our existing suppliers, including 20 of our most important suppliers .
Not only did we provide feedback and assessments during these audits, but we also used visits for other objectives such as surveying plants and adjusting delivery times as opportunities to listen to a wide variety of feedback concerning suppliers' QCD management frameworks, CSR approach, and the state of their organization. In addition to this kind of direct communication with suppliers, we communicate through the web as well to build and strengthen better relationships of mutual trust.

Supplier Training-Driven Support Efforts

The NGK Safety Cooperation Conference hosts meetings for facilities and equipment construction-related supplier members. These meetings are used as opportunities to share accident and disaster case studies, as well as to provide safety-related lectures.
The FY2023 meeting was attended by 77 people from 52 conference member companies. The keynote address was on the topic of safety awareness (How test pilots think about safety).

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*) with the potential to cause social issues such as human rights violations and poverty, and takes steps to avoid using such materials. Additionally, in response to requests from customers, we investigate suppliers regarding their responsible procurement of resources and raw materials.

Pursuing Quality for Products and Services

Basic Approach

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 attempting to create quality from the customer's perspective.
The NGK Group defines Quality Objectives each year in accordance with the Quality Policy based on the NGK Group Corporate Business Principles. This policy is focused on working to improve the quality of our operations* and reduce quality risks as our primary activities to increase customer trust. Moreover, we enhance our activities to increase customer trust by carrying them out in tandem with quality improvement activities.

* Quality of operation: Level of operational systems that are in place to ensure that promises made to customers are fulfilled.

Quality Policy ›

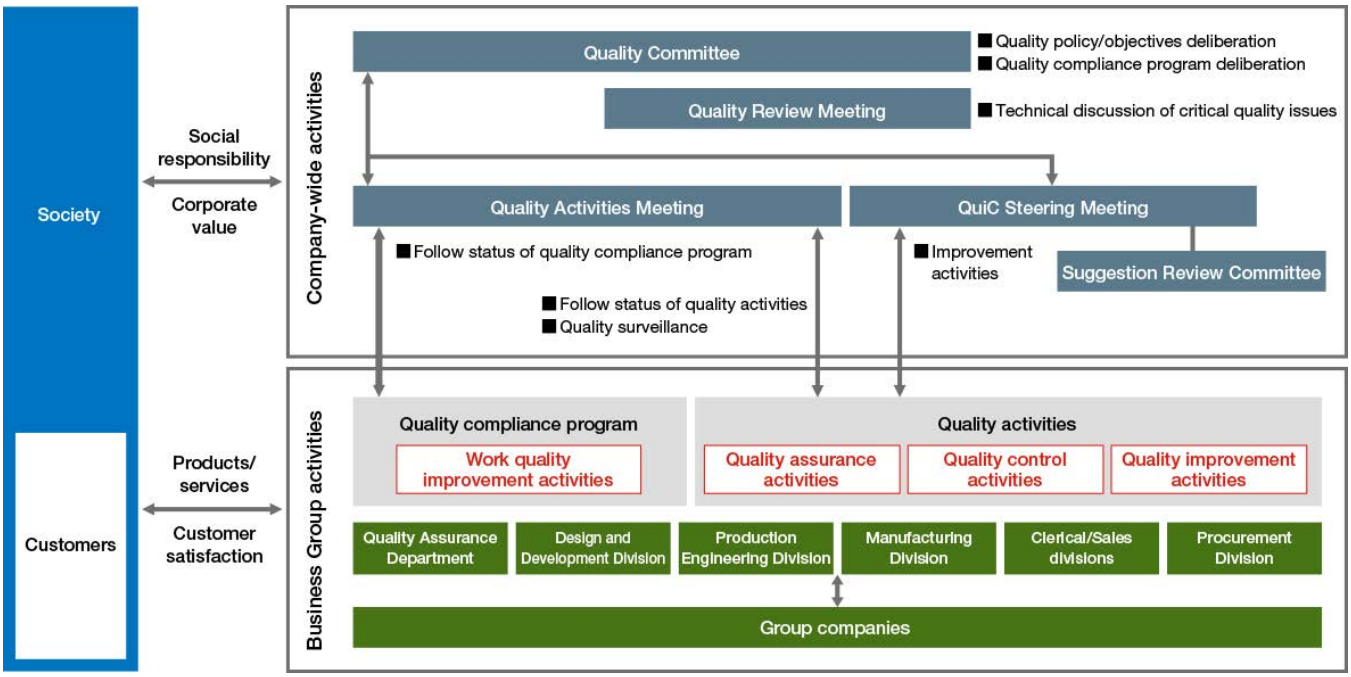
Quality Objectives FY2024

Everyone from management to workers in the field thoroughly discusses overburden, waste, and unevenness in our operations, and works to improve them.

Quality Activity System

The NGK Group quality activity system consists of a company-wide system, led by the Quality Committee Chair (Executive Vice President), and business division internal activity systems, led by the heads of each business group. In terms of company-wide activities, the Quality Committee was established to function as a deliberative body assisting the Quality Committee Chair, while business division internal activity systems were put in place for each business division, creating appropriate quality systems for each. Quality assurance, quality control, quality improvements, and quality education activities are promoted by the acquisition of ISO 9001 or IATF 16949 certification.
Each business group maintains a point of contact with customers, and works to further increase customer satisfaction by reflecting customer demands and things learned from quality problems in the market in our products and services.

Quality Activity System



Quality Control Systems Outside Japan

From their inception, production bases outside Japan have created quality systems appropriate to their situations and acquired ISO 9001 or IATF 16949 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 distributed group-wide in an attempt to develop and enhance quality activities.

Acquisition of ISO 9001 or IATF 16949 Certification

NGK and the all business group production sites, supporting functions, and locations at Group companies in and outside Japan have acquired ISO 9001 or IATF 16949 certification.

Social Data Collection

Activities to Increase Customer Trust

Improving Quality of Operations

Since FY2021, the initiative to improve "quality of operation" that we started in FY2018 has aimed to get each employee in the workplace to autonomously improve the quality of their work. As these efforts proceed, we are starting to form an organizational culture of being open about problems. In FY2023, as in FY2022, we continued to work on each initiative in our company-wide quality compliance program.

These include declarations of intent from management, establishing rules and regulations, conducting training, audits and monitoring, and preventative activities. Thanks to our efforts to prevent overburden and ambiguity in operations and ensure thorough communication, we have reviewed workloads and work rules, and are making progress on the understanding and dissemination of quality compliance in our workplaces and the front lines of operations at Group companies.
In FY2024 we are further enlarging the scope of our activities, and strengthening activities that ensure everyone from management to the front lines takes ownership of quality compliance and engages in discussions about the quality of operations to promote understanding.

Reducing Quality Risks

4 Rules for Quality Activities

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. We have formulated these quality activity rules particularly to enhance the elimination of quality risks in the market, and are promoting their adoption and improved effectiveness.

Quality confirmation rule

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

Design Review (DR) function strengthening rule

Register DR plans with quality risks of medium or high level as important DR subjects with participation of company-wide DR reviewers. The General Manager of the Corporate Quality Management Dept. holds company-wide DRs for cases with a particularly high risk level.

Quality monitoring rule

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

Rule for handling major customer complaints

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.

QRE-P Activities

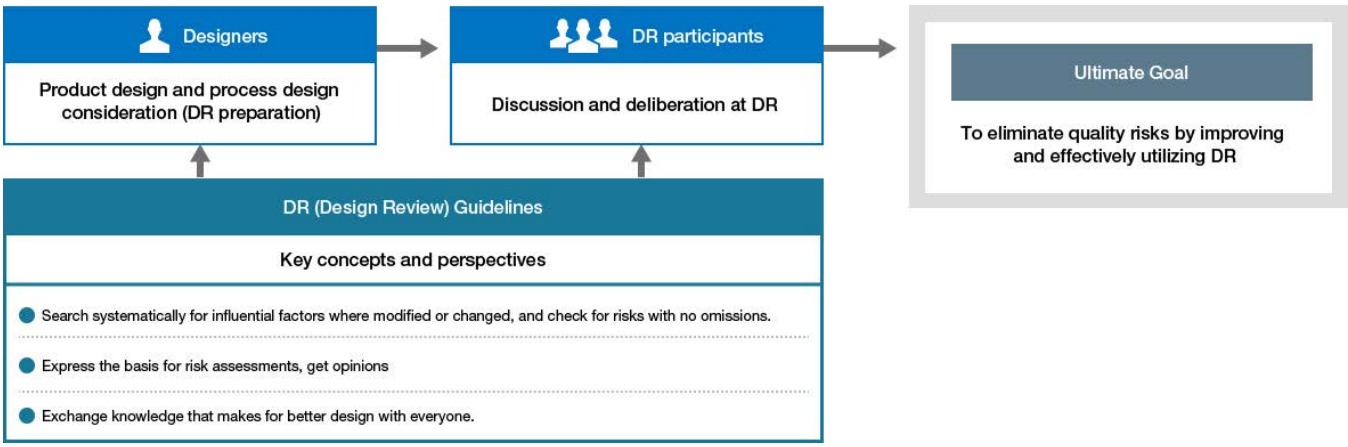
We have been promoting QRE-P activities* throughout the NGK Group. Through these activities, we can identify business procedures in the realization of products and services in order to eliminate risk while improving quality. Since the start of QRE-P activities in FY2017, we have worked to incorporate the QRE-P concept into quality systems in each department, and also have provided practical training so that the person in charge can put QRE-P in practice, using development projects as examples.
In FY2023, we began to make improvements in line with rules we established in FY2022 that call on departments to analyze both technical measures and deficiencies in business procedures and improve their own systems when a failure occurs in the market. Moreover, with the aim of more effectively and efficiently eliminating quality risks in development projects, we strengthened the system of joining the research and development departments in considering quality risks in accordance with QRE-P from an early stage in development before commercialization. In addition, to boost expansion of QRE-P activities, we began to roll out QRE-P activities to Group companies outside Japan as well as Group companies inside Japan.
In FY2024, we plan to further entrench the rules we established in FY2022 calling on departments to analyze deficiencies in business procedures and improve their own systems. Moreover, we will further encourage examination of risks together with the research and development departments from the early stages of pre-commercialization development. We also plan to actively promote QRE-P activities at Group companies outside Japan.

* QRE-P (Quality Risk Elimination Process): An operational protocol intended to more effectively eliminate quality-related risks at every stage when bringing products to market, from product planning to mass production.

Activities to Strengthen DR Functions

The increasing and diversifying quality demands from customers call for the integration of knowledge among various members throughout the development process, not only from the design department but also from the manufacturing and production engineering departments. For this reason, the NGK 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 quality risks.
The DR Guidelines were created to promote DR discussions and to thoroughly eliminate quality risks. We are constantly enhancing the effectiveness of DRs through efforts to spread these guidelines company-wide, including awareness and review of each DR.
Furthermore, NGK organizes a company-wide DR (quality review meeting) for quality issues that are difficult to solve by one department. At this meeting, relevant engineers and experts from across the company discuss broad aspects of issues related to the reliability and safety of products.
We are also deploying the above-mentioned QRE-P approach to facilitate improvement of design level at the pre-DR period as well as to ensure the more effective utilization of organizational knowledge and experience from DRs.

Flow of DR Activities



System for Considering ESG During Product Design

We design and develop products and services in accordance with the NGK Group Corporate Business Principles and Code of Conduct. As we strive to comply with the requirements of our customers and supply chain, we consider ESG by designing and developing quality management systems in accordance with the concept of QRE-P and the requirements of international standards (ISO 9001, IATF 16949, etc.). Output which takes into account QRE-P concepts like QFD and FMEA is shared and deliberated through Design Review (DR) and other examinations by those involved at the appropriate stage of development. In addition, we check implementation status through periodic internal audits of our quality management systems, and with audits conducted by our customers, supply chain, and certification authorities.

Quality Improvement Activities

QuiC Activities

Since 2003, the NGK Group has held QuiC (Quality up innovation Challenge) quality improvement activities in which all employees participate. These activities consist of quality improvement activities by small groups or individuals and suggestions that strive to enhance the quality of products, services, and work; best practices are then 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.
Plus, since FY2021, we have revised our proposal evaluation methods to prioritize content in addition to quantity. In July of FY2023, we held the Company-wide QuiC Activities Contest. Due to the COVID-19 pandemic, we held both physical and online versions concurrently. In October we held the NGK-BOX/Surprising Challenges! best practices presentation. NGK-BOX/Surprising Challenges! provides a company-wide forum for laterally sharing reform examples and model initiatives in order to boost employee motivation and invigorate the workplace. This was our fourth time to hold the event. Being able to hold this event in-person as well for the first time promoted communication between participants and helped to further increase motivation.
In FY2024, we will continue these activities, and pursue further quality promotion activities that all employees will take part in.

Suggestion Activity Participation Rate

	FY2020	FY2021	FY2022	FY2023
Manufacturing Department	93%	82%	89%	88%
Non-manufacturing Department	83%	71%	76%	69%
Clerical Department	50%	25%	27%	26%
Number of suggestions	Approx. 19,000	Approx. 16,400	Approx. 15,600	Approx. 14,500
Excellent Proposal Ratio	17.8%	18.2%	20.7%	24.5%

Company-wide QuiC Activities Contest

We held the best practices presentation "NGK-BOX/Surprising Challenges!" at the venue for the first time with a focus on bringing people together.

On-Site Training Inside and Outside Japan

For the first time in four years, we held overseas training that had been cancelled since FY2020 due to the effects of the COVID-19 pandemic. From November 4 through 11, the top nine recipients of the Outstanding Proposal Commendation and QuiC Excellence Award visited Poland and France to exchange opinions about improvement and experience foreign culture first-hand at NGK Ceramics Polska (ACP).
We resumed training inside Japan last year, and from December 13 through 16, nine recipients of the QuiC Excellence Award, Special Award, and NGK-BOX Excellence Award visited Okinawa to attend a nationwide QC Circle Conference and participate in discussion sessions about various topics, such as differences between NGK and other companies.

Visiting ACP for overseas training

Attending Nationwide QC Circle Conference during training in Japan

Quality-Related Education

Strengthening Quality-Related Education

The NGK Group aims to provide customers with products and services at a quality that exceeds expectations. Hence, we are continually working to improve the quality-related education that is given to all employees in order to ensure they are equipped with quality-related skills and greater quality-related awareness.
The primary educational activities include e-learning, face-to-face classes and through Microsoft Teams on themes such as level-based training for new and promoted employees, education in a wide range of fields from quality fundamentals to practical application, individual training on the themes of work issues and departmental needs, and basic statistical training to facilitate data utilization in collaboration with the Digital Transformation & Innovation Dept. We believe that training on quality management systems (QMS) to promote improvements in operational systems, and reliability training to establish activities that reduce quality risks (QRE-P activities) are of the utmost importance. And we aim to help employees acquire this experience through role playing and group discussions. We also try to support employment of statistical methods utilizing practical data. In FY2020, we began support activities for those taking QC tests, and the number of employees taking advantage of them has surpassed 1,300.

Quality-Related Education in FY2023

Training name	Number of participants	Objectives and key characteristics
Individual Training	37 sessions	– Skills development support for statistical analysis skills on the theme of operational challenges – Quality Education which reflects the needs of supporting departments with the trainee's superior
QC Methodology Practice	39 participants	– Introduce and practice using the seven QC tools for summarizing data (Q7) and other QC methods necessary for problem solving.
SQC (Statistical Quality Control) Methods Training	A total of 83 participants	– Learn statistical quality control methods – All 15 lectures were e-learning – All lectures were available to attend at any time
Reliability Basics Training	Reliability Basics Training 1: 56 participants	– Learn about design reliability, the physics of failure, and methods of analyzing reliability data
	Reliability Basics Training 2: 53 participants	– Learn methods of prevention, QFD, FTA, FMEA, Design Review (DR), and QRE-P at NGK – Skills development through discovering problems lurking in points of change and problem solving discussion – Understand NGK's DR and QRE-P
Study of Failure and Methodology of Creation	Study of Failure Lecture: Approx. 250 participants Methodology of Creation Lecture: Approx. 150 participants Guidance and consultation: A total of 16 participants	– Understand the concept of the study of failure and the benefits of using it – Understand how to enhance creativity and come up with new ideas by instrumentalizing objectives. – Improve analytical and developmental skills through lectures and seminars

Training name	Number of participants	Objectives and key characteristics
QMS Training	ISO/IATF standards interpretation: 726 participants	– Understand the intent and requirements of standards
	ISO/IATF Internal Quality Auditor training: 196 participants	– Internal quality auditor training and accreditation
	VDA 6.3 Process Auditing Seminar: 42 participants	– Understand process auditing requirements for VDA standards

Raising the Level of Maintenance Activities

With the aim of achieving a higher standard for maintenance activities and of improving productivity, a number of NGK Group employees in FY2022 took on the challenge of the Self-Maintenance Expert Test (Japan Institute of Plant Maintenance). This qualification is given to those who possess a broad range of necessary knowledge and skills concerning quality management, safety, and machinery maintenance, and are recognized as having the ability to plan and implement voluntary maintenance activities and provide instruction.
The NGK Group will continue encouraging employees to take the Self-Maintenance Expert Test as well as cultivate voluntary maintenance activities and stimulate greater employee motivation.

Number of Employees Who Passed the Self-Maintenance Expert Test

Company name	Number of Level 1 examinees	Number of employees who passed Level 1 (pass rate)	Number of Level 2 examinees	Number of employees who passed Level 2 (pass rate)
NGK	33	11 (33%)	34	24 (71%)
NGK CERAMIC DEVICE	5	4 (80%)	55	36 (65%)
NGK ELECTRONICS DEVICES	7	1 (14%)	-	-

Pursuing Safety for Products and Services

Basic Approach

The NGK Group pursues safety for our products and services through quality activities that follow our quality policy based on the NGK Group Corporate Business Principles.

NGK Group Corporate Business Principles ›

Pursuing Quality for Products and Services ›

Policies and Guidelines ›

Activity System

NGK's Quality Activity System consists of a Group-wide system led by the Quality Committee Chair (Executive Vice President), and activity systems within each business division led by the heads of each business group. We promote activities for pursuing safety of products and services within this Quality Activity System. The Quality Committee Chair also periodically reports on the contents of these activities to the Board of Directors.

To learn more about NGK's Quality Activity System, refer to the Quality Activity System › section.

Risk Assessment

We mainly carry out the following activities to assess safety risks concerning our products and services.

- We have established companywide guidelines for activities related to the safety of products and services. These guidelines present our approach to safety and approach/method for risk assessment and reduction in a format that complies with ISO/IEC Guide 51:2014. This is a basic international guideline concerning safety which forms the basis for promotion of activities related to the safety of products and services by our business divisions and R&D departments. Moreover, the concept behind these guidelines forms the quality assurance rules that are positioned as one of our six quality items requiring conformance. The system is designed to implement and verify these rules through QRE-P Activities[*1].
- Products and services developed by business divisions are subject to design review based on the requirements of IATF 16949/ISO 9001 and IEC QC 080000. We have included items related to the safety of products and services in the items to be discussed in the design review, and ensure they are discussed during the design stage. We also use internal and external audits to check the risk assessment status and uncover deficiencies in the work process in accordance with these requirements. The Corporate Quality Management Department participates in DR[*2] to confirm/support the risk evaluations from each department. This system is designed to deliberate on the status of implementation of risk assessment for products and services newly developed by the Quality Assurance Review Meeting.
- This activity system ensures that in the event of an emergency related to the safety of products and services, or when a particular incident is recognized, Corporate Quality Management Department or Corporate Planning Office takes the lead in corporate action based on our Basic Rules of Crisis Management.
- Each business division conducts risk analysis, implements preventive measures, and formulates emergency response plans in accordance with the requirements of ISO 9001/IATF 16949.
- We conduct customer satisfaction surveys based on the requirements of ISO 9001/IATF 16949 to ascertain the usage and deterioration of shipped products. Meanwhile, as part of our QRE-P activities, depending on the products characteristics, we monitor products in the market or periodically sample products from the market and consider what corrective measures must be taken with respect to product safety.

* 1 QRE-P (Quality Risk Elimination Process): An operational protocol intended to more effectively eliminate quality-related risks at every stage when bringing products to market, from product planning to mass production.

* 2 Design review

Communicating with Customers

In the NGK Group Corporate Business Principles and Code of Conduct, the NGK Group states that we will accurately and promptly disclose information required by society. We will also provide appropriate information about our products and services. We introduce products and disclose information related to product handling through the product information on our website, and provide handling precautions for each specific case. And we are working to strengthen our system for providing information related to the safety of products and services. When developing products, we check the regulations of the destination country to ensure safety in compliance with those regulations. Depending on customer request, the Quality Assurance Department in each business group takes the lead in cooperating with surveys of chemical substances contained in our products, as well as disclosing Material Safety Data Sheets (MSDS). In addition, our Guidelines for Environmental Action, Procurement Information, and NGK Group Supplier Code of Conduct stipulate that we will implement initiatives together with our suppliers which include the safety of products and services. Therefore, our product stewardship activities include prioritizing procurement of environmentally-friendly materials, parts, products, and equipment, as well as working to ensure proper management of the chemical substances contained within our products.

Products ›

NGK Group Environmental Policy ›

Procurement Information ›

NGK Group Supplier Code of Conduct

Employee Training and Education

NGK, and our Group companies in Japan, invest in systematic human resources development across all job areas from the time an employee joins the NGK Group, and at every stage in their advancement. Our company-wide training includes content related to the safety of products and services. Specifically, we provide training on IATF 16949/ISO 9000, as well as study sessions on the safety of products and services with regards to the Product Liability Act. In FY2023, we began education focused on the safety of products and services. Starting in FY2024, we will expand such education and further promote widespread understanding of these concepts.

Please refer to our FY2024 Company-Wide Education Scheme › for more information on company-wide training.

Improving Customer Satisfaction

Basic Approach

One of the focuses of the NGK Group Corporate Business Principles is to contribute to the "Realization of a Sustainable Society" through the products and services that we supply, and towards that end we have resolved to do the following.

Realization of a Sustainable Society

We will create new value through the provision of products and services that contribute to society, protect the world environment, and strive to realize a sustainable society.

- We will provide products and services the contribute to carbon neutrality and the digital community through technological innovation and face challenges to society through our business.
- We will openly respond to new demands or requests for improvement from our customers and society by developing and improving products and services.
- By providing high quality products and services whereby safety is a main consideration and which comply with environmental rules, we can earn the trust of customers and the community.

Disclosure of Company Information and Accountability

We will promote a healthy and transparent management by active disclosure of information and discussions with stakeholders.

- We will accurately and promptly disclose information required by society.
- We will pay close attention to the views of our stakeholders and fulfill our obligation to be accountable. We will build mutual trust with our stakeholders through continuous dialogue.

Customer Satisfaction Survey

In order to reflect customer feedback in our products and services, each of NGK's business groups independently develops and conducts surveys aimed at facilitating greater customer satisfaction.

Results of the Environment Business Group's* Customer Satisfaction Survey

2019	2020	2021	2022	2023
94%	100%	100%	100%	100%

Note: Calculation method
Participants were asked to respond to survey questions by providing a rating from one to ten, with responses of six or higher counted as "Satisfied."
The customers included in this survey account for 51% of total sales.

Human Capital Management

Basic Approach

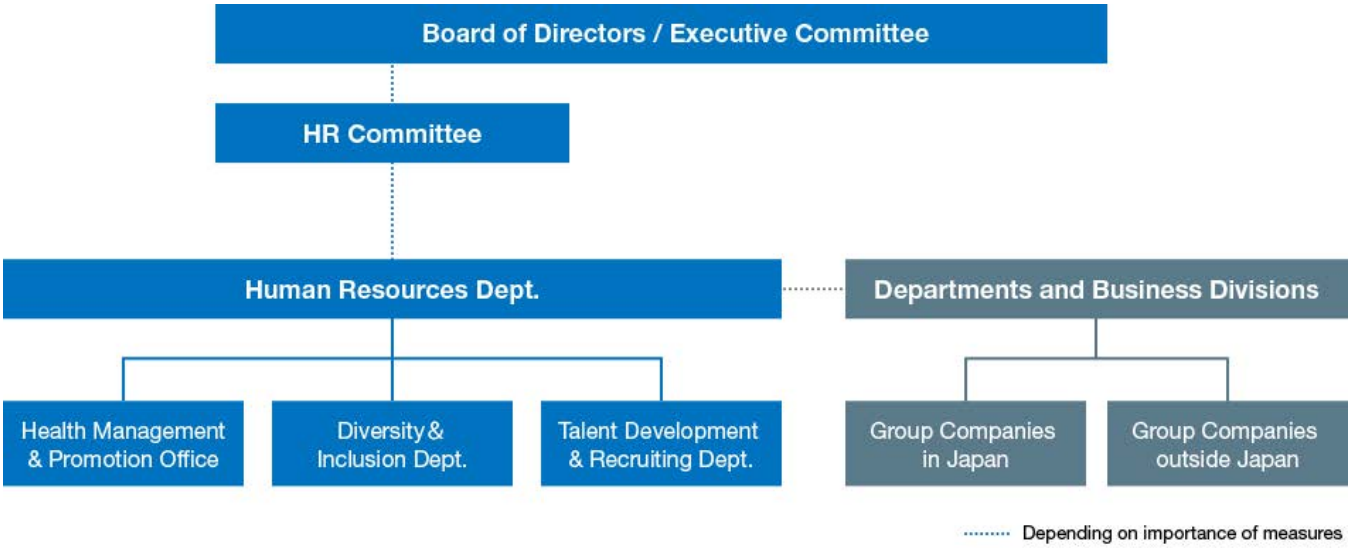
The NGK Group is reforming our business structure by establishing Five Transformations we must implement to realize what we want to be in 2050 “a company to contribute to carbon neutrality and digital society with our unique ceramic technologies.” Among these Five Transformations, we have placed our response to ESG issues at the core of our management. We recognize that human resources are a form of capital instead of a cost. Based on this recognition, we believe that maximizing the value of our human resources by linking our management strategies and human resource strategies will lead to an improvement in our enterprise value and growth.
We formulated the NGK Group Human Capital Management Policy, as well as the Human Resource Development Policy and Workplace Development Policy which embody it, in June 2023. This was based on the recent increase in requests for the disclosure of information from society relating to human resources and the NGK Group Vision.
It is none other than each one of our employees who will create new value for a sustainable society by implementing the Five Transformations to realize the NGK Group Vision: Road to 2050. We will maximize the abilities of our employees by providing rich and vibrant workplace environments to boost the human resources who will take on the challenge of transforming the NGK Group.

NGK Group Human Capital Management Policy ›

Promotion Structure

The NGK Group shares the NGK Group Human Capital Management Policy as a group-wide guideline and promotes human capital management over our entire group. The HR Committee deliberates various personnel policies based on the NGK Group Human Capital Management Policy. It then reports to the Board of Directors at least once a year on the matters it has determined to be important among those it has reached a decision on upon its deliberations and results in the fiscal year.
The NGK Group has sites around the world. Accordingly, we believe it is important from the perspective of effectiveness to formulate and operate strategies and policies to realize our Human Capital Management Policy in line with the situation and sense of issues faced in each of our group companies. We will continue to ensure the instillation of our Human Capital Management Policy by carefully communicating with the personnel departments at each of our sites about the policies and activities to suit each of them in the future.

Promotion Structure Chart



Initiatives to Disseminate Human Capital Management Policy

In FY2023, to ensure dissemination of our Human Capital Management Policy, we featured a special article about it in the internal newsletter for employees and Group companies in Japan. This article introduced the background and intentions behind the policy in an accessible way.
The General Manager of the Human Resources Dept also visited all 13 of our Group companies in Japan (some visits were conducted online) to engage in dialogue with the presidents and human resource officers of each company about our Human Capital Management Policy. Through these efforts, they gained a shared understanding that the key point was to create an organization and environment that encourage employees to want to continue to grow and flourish, and do so in a manner adapted to the situation of each Group company and location. They also confirmed that, while the skills and expertise required of each job differ, the basic mindset needed is the same regardless of role or position. For our Group companies outside of Japan, we conducted activities to build a shared awareness of these policies with eight companies in Asia and North and Central America. In the future, we hope to visit our Group companies in Europe, create opportunities for sharing policies, and work towards further dissemination.

Consideration/Establishment of New Key Personnel System

In order to implement the Five Transformations espoused in the NGK Group Vision, it is essential to further enhance our human resources going forward. We will revise our Key Personnel System as part of our measures to foster the kind of talent and create the kind of workplace environment we should strive for as stipulated in our Human Capital Management Policy. We aim to maximize the capabilities of our in-house personnel and boost our competitiveness in recruiting talented individuals from outside the company. The new system is based around the concept of improving transparency, fairness, and validity, and promoting autonomous action. We are aiming to inspire and strengthen actions that lead to innovation and taking on challenges by supplementing our existing “Performance Evaluation” with a new “Behavioral Evaluation” based on competency, and reflecting the results in employee compensation.
Starting in FY2024, we are introducing it first for non-executive employees who are 58 years-old or above, and plan to expand it to all key personnel in FY2025.

Labor Practices

Basic Approach

The NGK Group strives to create a rich, vibrant and open workplace environment supportive of those taking on challenges where diversity is respected and where various people can play a role. We implement a human resource system which enables every employee to perform at their full potential under fair treatment.

Fair Treatment and Evaluation

Human Resource System for Group S/M/J Employees

NGK's human resource system for Group S/M/J employees is one which enables all employees, from the young to the experienced, to work with enjoyment and fulfillment. As NGK develops its businesses globally and promotes the creation of new products and businesses, it is essential to motivate young and middle-level employees who will take on future key roles and encourage them to demonstrate their full potential. We are aiming to create an environment that makes these possible.

Key Points of the Revised System

Qualifications

- Developing a mechanism whereby all employees can take on the challenge to qualify for a higher job grade
- Clarifying the definition of each qualification

Evaluation

- Shifting to evaluation that better reflects the efforts and accomplishments of each individual

Retirement at Age 65

- Maintaining the same level of salary after age 60

Qualification Definitions

In order to ensure that educational background and age are not limiting factors for employees' careers, NGK maintains a merit-based qualification system for job promotion and grade transfer. Qualification-specific role differences are made clear, so employees are aware of what is required for higher level qualifications and can more readily attempt higher level job duties. The aim of this system is to reward the efforts of those with the will and ambition to move to a higher grade, as well as to facilitate each employee's journey along his or her career path.

NGK Qualification Definitions

Job Grade	Job Grade Definition
Key personnel	Key personnel are expected to demonstrate performance in the achievement of organizational results based on upper-level policies and the promotion of reforms for the sustainable growth of businesses and organizations by leading individuals and groups.
Group S	Group S employees are human resources who manage at the level of sections/teams or advanced specialist human resources. They are expected to improve the productivity of their section/team and to produce results by connecting and leading their section/team with their supervisors and related departments. Alternatively, they are expected to bear responsibility for important issues and operations as specialists in specific fields.
Group M	Group M employees are human resources at the center of practical operations and on-site leaders. They are expected to assist in the smooth promotion of overall team operations and to serve as on-site role models by supporting their supervisors and members with their techniques, skills, knowledge and experience as experts in specialist fields.
Group J	Group J employees are human resources who can think and work by themselves as those in charge of practical operations. They can understand the purposes and flow of overall operations and promote and accomplish the daily operations in general they have been assigned with the cooperation of those around them. They are expected to autonomously improve their techniques, skills, knowledge and abilities to play an active role in the workplace.

Evaluation System

NGK uses the following evaluation systems when determining individual compensation to maintain fairness in treatment, to thoroughly evaluate each individual's efforts and achievements each time, and to allow employees to feel their own growth.

Evaluation System	Content	Ratio of Applicable Employees
Performance evaluations	We evaluate the level of achievement and process of targets set at the beginning of the term as results. We evaluate to what extent employees have tackled work other than the targets they have been set.	100%
Role evaluations (group S/M/J employees only)	We evaluate to what extent employees have fulfilled the roles expected of them (qualification definition) with the elements stipulated for each qualification.	100%
Evaluation interviews	Employees have an interview with their supervisors about the setting of targets at the beginning of the term, improvement in the persuasiveness of the evaluation results with feedback at the end of the term, results in the applicable fiscal year, issues for the following fiscal year, and medium- to long-term career plans.	100%

Fair and Equitable Compensation

NGK and the Labor Union have signed an agreement that sets out original in-house minimum wages, which are fixed at a rate above the minimum wages by region and industry stipulated by the Minimum Wage Act. Through this agreement, we strive to improve employees' working conditions and avoid violation of relevant laws.
We also apply a system that provides the same wages for the same qualifications, irrespective of sex.

Difference in Wages Between Male and Female Workers in FY2023

Social Data Collection

Communication with Employees

Employee Engagement

Every year, NGK carries out an engagement survey. (Conducted biannually until FY2022)
For the survey carried out in FY2023, a total of 5,036 people took part (men: 4,410; women: 626).
When compared against the average for other companies, the responses from NGK employees regarding job satisfaction and sense of relative importance tended to be higher.
These survey results will be utilized as basic data for use in developing human resource measures focused on creating an organization that is more worker-friendly and offers employees a sense of challenge. The workplace-specific results will also be provided as feedback to supervisors and used for workshops intended to enhance vitality, thereby contributing to improvement in the daily workplace environment.

Results of Survey on Workplace Vitality

Employee turnover Rate

Voluntary Resignation Rate

Social Data Collection

Labor-Management Initiatives

Freedom of Association

NGK respects workers' rights, including the right to collective bargaining, and strives to build healthy labor-management relations. As of March 31, 2024, 4,074 employees belonged to the Labor Union.

Labor Union Membership Rate

Social Data Collection

Protecting the Right to Collective Bargaining

NGK and the Labor Union have signed a labor agreement as equal partners. The agreement specifies that both parties shall respect each other's rights and take responsibility for the exercising of their own rights. The two sides regularly hold Labor-Management Advisory Board meetings to exchange information and promote mutual understanding. They also maintain healthy labor-management relations by exchanging opinions on issues such as management policies, financial conditions, and activities of the Labor Union.
Collective bargaining sessions are held in an orderly manner, with both parties striving in good faith to resolve issues peacefully and promptly.

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

Notification of Transfers due to Business Necessity

NGK stipulates in the labor agreement we have entered into with the NGK Labor Union to determine any transfers due to business necessity upon considering the abilities, health and family circumstances of the employees in question. In addition, we have adopted rules to inform the individuals to be transferred at least three weeks in advance in principle.
In particular, we have stipulated in the labor agreement that we will consult with the union in advance when collectively transferring employees or other matters judged to have a major impact on union activities.

Labor-Management Consultations in FY2023

Regular Labor-Management Council meeting: held twice
Labor-Management Advisory Board meeting: held twice
Other bargaining and consultations

- Consultation on overtime work and work on days off
- Discussions about labor-management in the workplace

Diversity and Inclusion

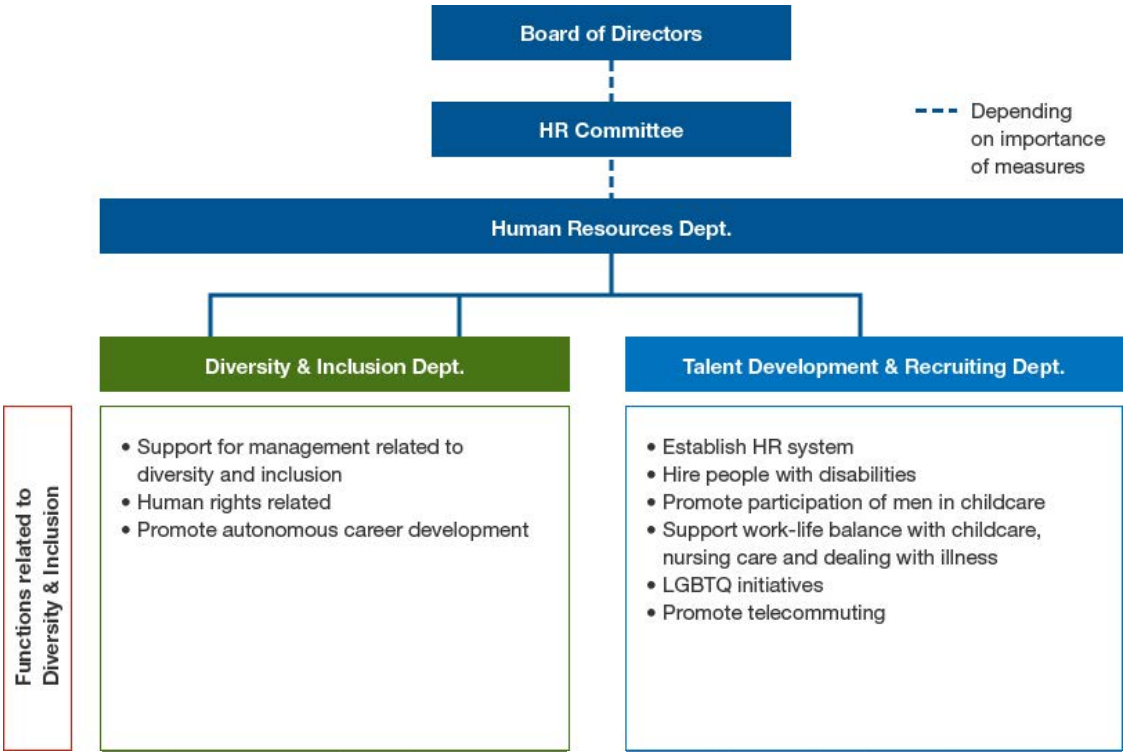
Basic Approach

The policy of the NGK Group is to provide stable and equal employment opportunities to people possessing a diverse range of attributes, regardless of race, national origins, gender, sexual orientation and gender identity, age, religion, belief, existence of disabilities or any other aspect. We promote even greater efforts to achieve diversity through educational activities to support work-life balance, employ people with disabilities, and advance understanding of diversity and inclusion. In addition to this, we also maintain an environment that enables diverse human resources to enjoy a wide range of work styles by utilizing telecommuting, providing other flexible work styles, and offering a wide range of career paths that each employee can pursue individually, according to personal inclination, suitability, and type of work.

Views on Hiring Locally

Ninety-eight percent of the roughly 12,000 employees in the NGK Group who work overseas are hired locally. We believe that it is our corporate responsibility to contribute to the development and vitality of the local economies and communities where we operate our business in each country and region, and actively hire locally at each location.

System to Promote Diversity and Inclusion



Systems and Initiatives to Support the Active Participation of Diverse Personnel

NGK is promoting various measures for personnel transfer, career development, follow-up, support for early return from leave, flexible work styles, and the like, to create an environment that makes it possible for employees to take full advantage of their individuality and skills in various aspects and situations.
The human resource system for general employees enables career advancement by allowing individual employes to proactively take on the challenge of moving up to a higher job grade.
We also introduced a telecommuting system in July 2021 with the goal of improving productivity for employees and NGK, as well as promoting a good work-life balance between work duties and childcare or nursing care.
In April 2022 we established a consultation helpdesk related to work-life balance which works to reduce employee concerns about balancing work and private life and seeks to create a conducive work environment.

Human Resource Utilization Systems Aligned with Employee Individuality and Skills

To open the way for employees to take full advantage of their individuality and skills, NGK adopts an internal job application system in which open positions are announced internally and eligible applicants are appointed. There is also an FA (free agent) system that allows employees to register their personal aspirations and preference of jobs within the company.

Internal Job Application System

Social Data Collection

System for the Regular Appointment of Fixed-Term Manufacturing Contract Employees

NGK established a system for appointing fixed-term manufacturing contract employees to regular employment, and 18 employees were appointed in FY2023.

Appointment from Fixed-Term Contract Manufacturing Workers to Regular Employees

Social Data Collection

Operating Follow-up System to FitYoung Employees in the Workplace

We follow up on younger employees in different ways after they have been placed. We conduct surveys for career-track and production engineering employees about their jobs and work environment during their second year of employment. We then conduct interviews with all production engineering employees, and any career-track employees who so desire, and the head of each department provides feedback to those who want it.

Initiatives for Employees to Chart Their Own Career Path

Concept

Since 2021 NGK has been implementing initiatives under our employee Career Autonomy policy.

Policy

Support autonomous career development within the company

Career Autonomy E-Learning

Since FY2022, we have conducted e-learning aimed at all employees, and more than 4,000 employees have participated thus far. They studied the following topics as the basic knowledge necessary for thinking about their own career independently.

1. Career ownership and careers in an era of 100-year life expectancy
2. How to approach your career (two types/two aspects/three factors)
3. Things that are necessary for enhancing your career (Will/Can/Must)
4. Career plan concept

Career Planning Training for Third-Year Regular-Position Employees

Once employees have been with NGK for three years, we ask them to reflect on their growth over the last few years and think about how they will approach internal staff rotation from their fourth year onward. Our goal has been to support them in creating a concrete action plan towards this end. This has become an opportunity for employees to think about their career going forward through group discussion with more senior employees who have experience with rotation. Once the training is complete, participants also meet with their supervisors to share their career plan.

Career Planning and Leadership Training for Newly Promoted Employees

We provided career planning and leadership training for newly promoted employees. The purpose of this training was to deepen employees' self-understanding and to promote career planning as an opportunity to think about future work styles as they are undergoing a career change such as a promotion. Participants prepare to start a new path as human resources who can fulfill their roles by learning about the expectations in them, the concept of the career necessary for their roles and knowledge in this training. Moreover, we provided this training among those promoted to the supervisor class in the same fiscal year. The aim of this was to allow participants to acquire the necessary practical communication skills to lead their teams.

Career Design Seminar for Employees in their 40's and 50's

We held a Career Design Seminar for Employees in their 40's and 50's targeting key personnel and general employees. We ask participants to reflect on their own past and present in order to maintain motivation and work with energy. Through work and discussion, they confirm their own characteristics, abilities, and values in search of a proactive work style that suits them and will allow them to prepare for future changes in their environment. Participants have told us that they deepened their understanding of their own characteristics and values and that it gave them an opportunity to think about their lifetime career.

Career Consultation Helpdesk

At the helpdesk, certified career consultants provide career formation support and consultation services to employees, while strictly observing confidentiality. In FY2022, we established a helpdesk which also allows employees to consult with external career consultants.

Come-Back System

Since FY2016, NGK has had its Come-Back System to rehire people who had left our company for various reasons (e.g., job change, studying abroad, job transfer of a spouse, etc.) as mid-career employees. As of FY2023, there have been two employees rehired through the Come-Back System.

Come-Back System (Japanese) ›

Conducting E-learning to Promote the Active Participation of Women

Women's active participation e-learning was carried out in FY2020 with the aim of promoting proper understanding and cooperation among all employees and not just a targeted segment of participants. Easy-to-understand videos were streamed, which featured messages aimed at female employees, supervisors, and colleagues and which sought to raise awareness about unconscious bias and other topics.

New Initiatives for Achieving Our Action Plan for Promoting Women's Active Workplace Participation (MHLW)

In March 2023 in accordance with the Act on Advancement of Measures to Support Raising Next-Generation Children and the Promotion of Women's Participation and Advancement in the Workplace, NGK submitted a general employer action plan to the Aichi Labor Bureau, which is overseen by the Ministry of Health, Labour and Welfare (MHLW).

Ministry of Health, Labour and Welfare: General Employer Action Plan

Purpose

We will promote the enhancement of the work-life balance starting with the participation of men in childcare. We will create an employment environment where all our employees can demonstrate their abilities to the maximum possible extent. In addition, we have formulated the following action plan with the aim of increasing the number of women in managerial positions by taking initiatives relating to the advancement of women in the workplace.

Period of the Plan

April 1, 2023 to March 31, 2026

Target 1: Take-up rate of childcare leave* by male employees of 100% [Next-generation and Female Advancement]

* This is the take-up rate of long-term childcare leave and leave for childcare purposes

Details of the initiative:

- We will instill within our company the promotion of male childcare by our top management with our declaration to achieve 100% of eligible male employees taking childcare leave (2023).
- We will improve our Intranet to make it even more informative and easier to use. Moreover, we will publish introductions to male employees on childcare leave on the Intranet. That will allow employees to feel more familiar with male childcare leave (2024).
- We will ascertain the actual number of male employees taking childcare leave. We will then consider and implement the measures necessary (from 2025).

Target 2: Reduce total working hours to enhance the work-life balance of all employees [Next-generation]

Details of the initiative:

- We will hold no-overtime days. Top management within the company will make family-friendly boss declarations.
- Labor and management will regularly exchange opinions about overtime hours and the paid leave take-up rate.

- We will strive to encourage employees to take leave and to change employee's awareness toward leave to raise the number of employees taking paid leave. We will achieve these aims by creating a workplace environment where it is easy to take leave and by raising awareness among both those in managerial positions and employees.
- We will set upper limits for overtime hours by department. If we anticipate those limits will be exceeded, labor and management will hold talks to analyze the causes and to consider measures to reduce long working hours.

Target 3: Raise the ratio of women in managerial positions to 5% [Female Advancement]

Details of the initiative:

- We will increase the ratio of women among new graduate recruits to 30% for clerical/sales positions and 20% for technical positions (from 2023).
- We will place half of new graduate female employees to business groups because the placement of female employees is biased toward headquarters and research departments (from 2023).
- We will provide seminars after employees return to work from childcare leave (ongoing program).
- We will introduce training to develop women who have converted to career-track positions into senior staff level (2024).

Number of Key Personnel (Managers)

NGK is aiming to increase the rate of female managers from 3.7% in FY2023 to about 10% by 2030 and by more than 20% by 2050.

Social Data Collection

Number of female key personnel (managers) as of March 31, 2024

Social Data Collection

Supporting the Active Participation of Diverse Personnel

LGBTQ Initiatives

In order to promote understanding of sexual minorities such as LGBTQ for the sake of fostering greater diversity in workplace participation, we provide education and hold awareness raising activities such as video-based training for employees. In FY2021, we began working to allow same-sex partners recognized by External Partner Organizations to utilize our internal service and benefit program.

Employment of People with Disabilities

NGK undertakes a variety of initiatives aimed at employing people with disabilities, such as accepting students from special-needs schools as trainees under our framework for people with disabilities. NGK hired two new graduates in FY2023. In addition, nine new employees have been hired by our special subsidiaries. These hiring activities led to a hiring rate of 2.55% as of the end of FY2023. As of April 1, 2024, we have already reached the statutory employment rate (which was increased from 2.3% to 2.5%). The statutory employment rate will be increased from 2.5% to 2.7% on July 1, 2026. So, we plan to expand our employment of people with disabilities from FY2024 onward as well to meet this standard. The NGK Group recruits people with disabilities according to their skills and the characteristics of each business to work at our special subsidiary company NGK YU-SERVICE CO., LTD. and other companies inside and outside Japan. Such employees receive reasonable accommodations and serve actively as members of the Group.

Systems and Initiatives to Support Diverse Working Styles

Promoting Work-Life Balance

NGK strives to promote a work-life balance and reduce long working hours.
We keep track of social changes, such as changing attitudes toward work as well as legislative amendments, and strive to respond to these changes flexibly and properly by improving systems and revising operations.

8 rules for promoting 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. Employees must take a minimum of 10 days of annual paid leave a 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 in advance when requesting employees to work on holidays or late at night
8. There must be an interval period of at least 10 hours between shifts of late-night work

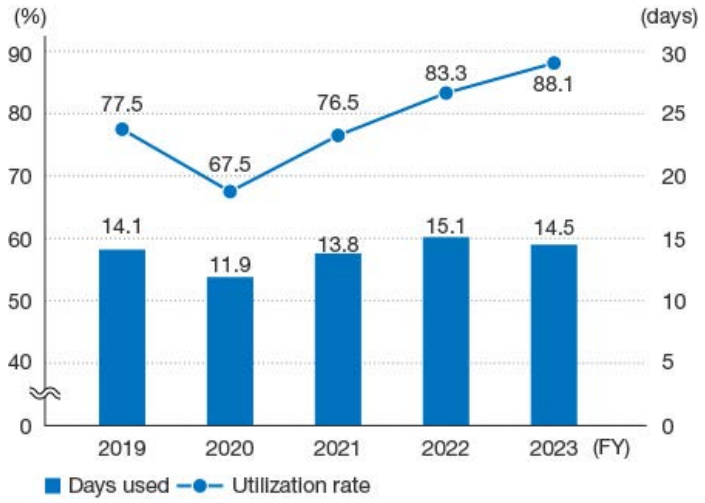
Initiatives to Shorten Total Hours Worked

Health Management: Initiatives to Shorten Total Hours Worked ›

Initiatives to Promote Use of Paid Leave

In FY2023, we set the minimum number of paid leave days to be taken by all employees at 10. We then worked to improve the ratio and number of paid leave days taken.
Hereafter, we will continually implement initiatives to promote a good work-life balance.

Paid Leave: Number of Days Used, Utilization Rate (NGK Union members; excluding outside employees temporarily assigned to NGK)



Establishing a Diverse Work-Style Support Website on Our Company Intranet

We have a site on diverse work styles on the company intranet to widely announce our measures to support a work-life balance. This site's user-friendly features include, for example, an online handbook on childcare and nursing care.

Initiatives to Support Work-Life Balance

NGK offers flexible systems to help employees maintain a balance between work and family life. 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. And in consideration of the working environment, we offer support through shortened working hours and flex time. Further, we continue to enhance the soft infrastructure NGK has in place to support these employees. For employees seeking to balance their career with childcare, we offer pre-maternity leave interviews, pre-reinstatement interviews during the long-term childcare leave period, career consultations, and other consultation resources. For employees undertaking nursing care, we offer nursing care-related information sessions and distribute nursing care handbooks, as well as facilitate consultation services which make use of outside specialist organizations.

Enhancement of Work-Life Balance Systems

NGK has been expanding our work-life balance systems while taking the needs of employees into consideration. Thanks to initiatives such as these, over 90% of male employees* took childcare leave in FY2023.

* Total percentage of male workers whose spouses gave birth in the fiscal year preceding disclosure, who took long-term childcare leave or used leave for childcare purposes that year. (fiscal year: April 1, 2023 to March 31, 2024)

2010	Significant revisions to personnel system
2017	NGK established a new early reinstatement lump-sum system for employees who return to work early from childcare leave following maternity leave (before the child turns 11 months old). We also started a non-registered daycare subsidy system to partially cover the cost of non-registered daycare centers, and began initiatives to provide career support to employees after they return to work. And, in addition to childcare and nursing care, we have established a system that allows for flexible work styles so that employees with illnesses which require repeated or continuous treatment can balance treatment and work without having to resign.
2018	NGK encouraged employees to exercise their abilities and achieve work-life balance by providing flexible work styles and environments, unconstrained by time or place. We also promoted the development of a work environment that boosts operational efficiency and productivity. In concrete terms, this meant considering and expanding telecommuting options.

2019	NGK introduced postpartum support leave for male employees. Employees can use accumulated leave (expired annual paid leave from previous years) instead of paid leave, and it can be taken in day-by-day increments which do not need to be consecutive. This has led to more male employees taking childcare leave than before the system was introduced.
2020	NGK officially introduced a telecommuting system to increase productivity and help balance work with childcare.
2022	NGK increased our special paid leave, for when a spouse gives birth, from two days to five days. We also included an explanation of the system for both those who will give birth and those who have a spouse who is scheduled to give birth in the Handbook to Support the Balance of Work and Childcare and on our internal portal site. And we established a point of contact for consultations relating to work-life balance to reduce anxieties among employees. Moreover, we have made it obligatory to hold an interview using the Request Sheet for Scheduled Childcare Leave. We held a talk for managers on the theme of Promoting the Take-up of Childcare Leave by Male Employees in NGK (FY2021). In addition, we informed all employees about the key points on the revisions to the Child Care and Family Care Leave Act and the changes to the operation of the system. As a countermeasure against the "first grade wall" [whereby mothers often quit their jobs when their children enter elementary school] we introduced a five-hour working day. This is even shorter than our previous reduced working hours. We increased the period of time in which parents can utilize reduced working hours, from until the child enters the fourth grade, to until the child graduates from junior high school.
2023	NGK created a guidebook for employees who are pregnant or have given birth, employees who have stated their spouse is pregnant or has given birth, and their supervisors. We also posted examples of best practices within NGK taken from our Questionnaire on the Division of Duties When a Subordinate Takes Childcare Leave to our portal site.

System to Support Employees to Balance Work and Childcare at Each Stage

	During pregnancy	Before/after birth	During childcare leave	Balancing work and care
	Interview (employee, supervisor, and HR)		Interview (employee, supervisor, and HR)	
Work systems	Measures on health management Overtime work exemption Late-night working hours exemption Flex time system	Time off before/after birth Special paid leave when a spouse gives birth Childcare leave (using accumulated vacation days)	Paternity childcare leave Childcare leave Continuing the childcare leave Post-maternity support leave (for male employees)	Shortened working hours Flex time system Unscheduled work exemption Overtime work exemption Late-night working hours exemption Half-day paid leave Caring for a family member (using accumulated vacation days) Caring for a child Lump-sum payment for early return
Other systems		Childcare Concierge (for those living in the Tokyo metropolitan area)		Priority use of commuter parking lots (Nagoya area) Non-registered daycare expense subsidy
Financial support systems: Family Fund		Maternity gift		Babysitter expense subsidy Elementary school enrollment gift
Financial support systems: Insurance benefits: Health insurance		Lump-sum birth allowance		
Financial support systems: Insurance benefits: Employment insurance			Childcare leave benefits	
Salary		Paid 2/3 standard daily wages during time off before and after birth	Unpaid	Lump-sum payment made six months after returning to work (330,000 yen) *Applied to salary for month following the month elapsed
Bonus		Paid a bonus calculated for a 2/3 attendance rate during time off before and after birth	Unpaid	

Systems to Support Early Return from Parental Leave

NGK has systems to encourage and support employees who have taken maternity and childcare leave so that they can return to their careers at an early stage.
These systems are aimed at developing workplaces that support female employees in particular, with the expectation of promoting their active participation.

Systems to Support Early Return from Parental Leave

- Lump-sum payment for early return
- Non–registered daycare center expense subsidy
- Childcare Concierge
- Five-hour shifts
- Paid leave provided to employees who return early from parental leave
- Measures to promote the use of telecommuting

Overview of Childcare Support Measures and Users

Systems beyond Legal Requirements

System Name	Details of the System	Category		FY2019	FY2020	FY2021	FY2022	FY2023
Childcare leave	Until the day on which the employee's ch ild reaches 1 year old in principle. When there are certain circumstances, such as not being able to get into a daycare center, leave is available until the child turns 2 years old. * It is possible to use accumulate dleave (expired paid leave from previous years).	Number of childcar e leave takers	Total	40	64	79	157	172
			Male	19	35	56	127	143
			Female	21	29	23	30	29
		Return to work rate	Total	100	100	99	100	100
Shortened working hours	6 or 7 hours per day for employees until the fiscal year when their children start 4th grade in elementary school.	Number of employ ees taking shorten ed working hours	Num-ber of leave takers	64	62	79	69	76

Item	Details	Category	FY2022	FY2023
Rate of employees taking childcare leave Fiscal year preceding disclosure (April 1, 2022 through March 31, 2023)	Total percentage of male workers whose spouses gave birth in the fiscal year preceding disclosure, who took long-term childcare leave or used leave for childcare purposes that year.	Male	91%	98%
	Percentage of female workers who gave birth in the fiscal year preceding disclosure, who took childcare leave that year.	Famale	103%*	87%

* The rate of female employees taking childcare leave is calculate as the ratio (b/a) of female workers who took childcare leave in the fiscal year preceding disclosure (b), to those who gave birth that year (a). (b) includes employees who had a child in the fiscal year prior to the announcement, but who did not take leave during that year, instead taking it the following fiscal year. So it is possible for the rate of utilization to exceed 100%.

NGK Unique System

* Record of the number of people using these systems

System Name	Details of the System	FY2019	FY2020	FY2021	FY2022	FY2023
Return to work after childbirth lump-sum payment	Lump-sum payment is paid 6 months upon returning to work after taking maternity leave and childcare leave	25	26	38	19	21
System for annual paid leave in hourly increments (for employees working shortened hours)	Paid leave (five days a year) can be taken in hourly increments by employees working shortened hours	62	58	73	68	76
Postpartum support leave	It is possible to use accumulated leave (expired paid leave from previous years) for leave for childcare purposes	15	16	15	34	37

System Name	Details of the System	FY2019	FY2020	FY2021	FY2022	FY2023
Pre-maternity leave interview	Interview is attended by employee, HR, and supervisor to provide the employee with peace of mind while on maternity leave and ensures both sides have proper understanding of procedures related to systems supporting childcare and work (it is also possible for the spouse to attend in the case of marriage between NGK employees)	24	20	31	29	30
Interview before returning to work	Supports smooth transition back to work through consultation on work details and work style	25	25	32	27	24
Leave for accompanying a spouse on overseas assignment	Enables employees to take a leave of up to 2 years and 6 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	2	0	1	4	3
Maternity gift	50,000 yen gift when a child is born	218	260	223	224	245
Babysitter expense subsidy	Provides up to 100,000 yen per year for employees who must pay for a babysitter or daycare due to working hours	11	31	28	43	46

System Name	Details of the System	FY2019	FY2020	FY2021	FY2022	FY2023
Childcare Concierge (available to those who live in the Tokyo metropolitan area)	Support to facilitate the process of putting a child in daycare and returning to work	1	0	0	0	0
Priority parking spaces to support childcare	Priority parking spaces availa ble at a commuter parking lot	40	40	41	37	46
Lump-sum payment for early return	We pay 100,000 yen as a lump-sum payment when an employee returns to work by the day on which their child reaches 11 months old after maternity and childcare leave	5	3	4	4	4

Helping Male Employees Have Greater Involvement in Childcare

We are working to encourage our male employees to take childcare leave. Our aim is to create an environment where husbands and wives raise their children together while respecting each other's careers and where it is possible for employees to balance work and life in the workplace regardless of their gender or whether or not they have children.
We have revised the Handbook to Support the Balance of Work and Childcare which previously mainly described the systems for female employees. We now explain in easy-to-understand terms the systems for male employees. Moreover, we have been holding pre-maternity leave interviews not just with female employees but also their spouses in the case of marriage between employees in our company since FY2022. Holding interviews between supervisors and male employees who have a spouse about to give birth lowers a consciousness to divide roles by gender in the home and at work. It encourages employees to balance their lives and work utilizing the available systems. We are promoting the creation of an environment where everyone can easily use these systems by asking supervisors to also promote the coordination of work so that employees can actually take leave and to foment understanding among those around them. Furthermore, we established the Consultation Helpdesk for Anything Related to the Work-Life Balance in FY2022. Those in charge of the helpdesk in the HR Department carefully respond to inquiries about the information and systems necessary to balance both work and childcare. There were 21 inquiries in FY2023. In addition to those related to the content of the systems we have available, there were inquiries about the childcare leave period from employees themselves and questions about smooth workplace management from supervisors with subordinates planning to take childcare leave.

Seminars for Employees Returning from Childcare Leave

Training was provided for female employees returning after the end of their designated childcare leave period, as well as for their supervisors, their spouses (when their spouse also works for NGK) and their spouses' supervisors.
During this training, spouses were encouraged to take ownership of childcare so that the responsibility for housework and childcare is not disproportionately borne by women. Participants were also offered advice on how to orient their focus and coordinate their schedule in balancing work and family responsibilities, as well as how to go about developing a medium-to-long-term career plan after returning to work. Despite being from different departments, all of the participants were alike in that they are balancing work and raising children, and through their interactions with one another, they were able to share their stories, their struggles, and their advice.

Enhancement of Nursing Care Support System

In line with revisions made in January 2017 to the Child Care and Family Care Leave Act, we made revisions to our own system, such as enabling employees to divide their one-year nursing care leave into three blocks. Moreover, in April 2022, we relaxed the requirements for employees with a fixed term employment contract to receive this support, so that even employees with less than a year of continuous service can claim nursing care leave. In this way, we are working to enhance our nursing care support system.

Systems to Support Nursing Care

<table>
<tr><th>Working hours</th><th>Time off</th><th>Financial support</th></tr>
<tr><td rowspan="3">1. Shortened working hours
2. Working three days a week
3. Flex time system
(for employees at departments to which the regular flex time system does not apply)
4. Limitation on overtime work
5. Unscheduled work exemption
6. Late-night working hours exemption</td><td>7. Caring for a family member using accumulated vacation days
8. Unpaid days off to provide care</td><td rowspan="3">10. Care leave benefits
11. Care leave support fund
12. Lump-sum care allowance</td></tr>
<tr><td>Leave of absence</td></tr>
<tr><td>9. Care leave</td></tr>
</table>

Third-Party Certifications

Certified as an L-boshi Company for Excellence in Promoting Women's Active Participation

In March 2017, NGK was certified as an L-boshi company by the Minister of Health, Labour and Welfare (MHLW). This certification is granted to companies that have done excellent jobs in accordance with the Act on Promotion of Women's Participation and Advancement in the Workplace.
Each applicant for the certification is evaluated on five criteria: recruitment, employment continuity, working hours, percentage of female managers, and diverse career paths. In September 2019, NGK satisfied all five criteria and received certification for level three, the highest certification level.

Ministry of Health, Labour and Welfare
Next-generation support certification logo
Platinum Kurumin (2023)

Ministry of Health, Labour and Welfare
L-boshi certification of corporate excellence in the promotion of women's active participation
Certification level 3 (2019)

Selected by METI and the Tokyo Stock Exchange as Next Nadeshiko: Companies Supporting Dual-career and Co-parenting

NGK was elected by the Ministry of Economy, Trade and Industry (METI) and the Tokyo Stock Exchange as one of the Next Nadeshiko: Companies Supporting Dual-career and Co-parenting which was newly established in FY2023. Companies are selected for being particularly outstanding based on their efforts to support both men and women in striking a balance between empowerment in the workplace and child rearing (i.e. dual-career and co-parenting).
Since NGK expanded our work-life balance support systems in step with the revision of the Child Care and Family Care Leave Act in 2009, we have continued to promote the creation of an environment in which everyone can work comfortably and improve their work-life balance. This includes enabling women to remain employed and actively participate in the workplace, and encouraging male participation in childcare. The participation of men in childcare is directly linked to promoting the active participation of women in the workforce. NGK recognizes that this is essential for creating a workplace that respects the diversity we aim for—where a variety of people can play an active role, and where everyone is recognized and respected. So we are working to support this. Going forward, we will continue to create an employment environment in which all employees can fully demonstrate their abilities.

Human Resource Development

Basic Approach

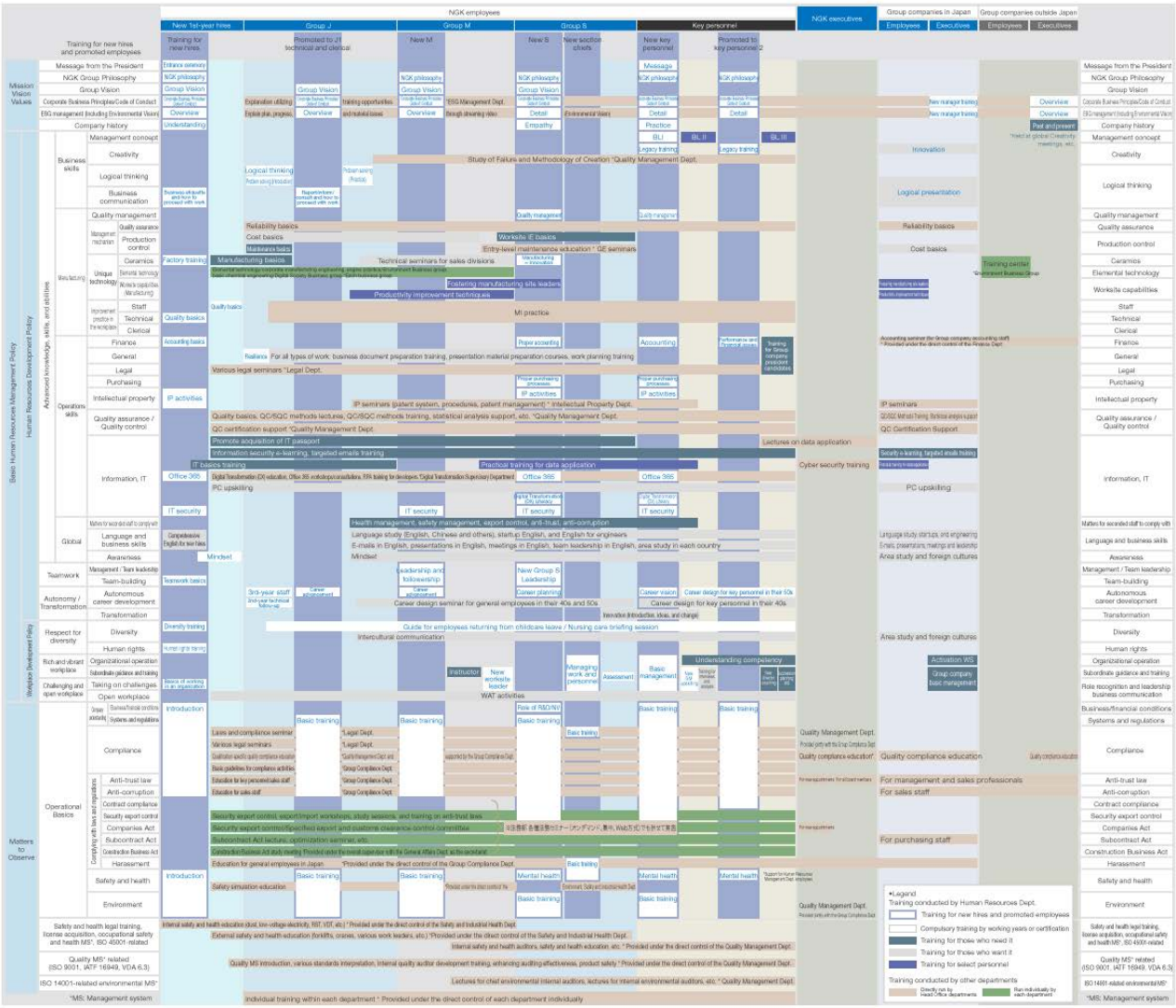
We have positioned "Quality of People: Embrace challenges and teamwork" as the top value in Our Values and "Enriching human life by adding new value to society" as our Mission in the NGK Group Philosophy. In addition to providing educational programs, we also work with superiors and create a workplace environment where each employee can take the initiative in their own growth. The goal of this is to enable employees to contribute to the business in the environment in which they work.

Skills Development for Employees

NGK undertakes systematic human resource development for employees, which encompasses every job category from employment to every promotion milestone in their career. Some of this is conducted along with our Group companies in Japan.
In our policy, we have set the goal of cultivating people with the following kinds of abilities and mindsets in order to implement the five transformations described in our Group Vision. To this end, relevant departments are working in cooperation to strengthen this initiative.

1. Cultivate advanced knowledge, skills, abilities or their combination, and proactively approach to problems
2. Demonstrate teamwork and persistently lead to results
3. Autonomously grow and continuously change oneself and the company

FY2024 Company-Wide Education Scheme



FY2024 Company-Wide Education Scheme

Key Personnel Competencies

In order to improve the managerial skills of key personnel and, thereby, contribute to greater organizational vitality, we have defined the “key personnel competencies (behavioral traits)” that are expected of key personnel in NGK.
As the diversity of our human resources continues to increase, we want to put in place a structure that promotes a shared awareness across our company to enable key personnel to effectively contribute to business performance.
We have established key personnel competencies for the sake of achieving the following aims.

- Ensure key personnel have a correct understanding of their expected roles so that their performance meets the expected contributions of those roles to company development.
- Ensure key personnel candidates have a clear vision for themselves, and promote their growth towards recruitment as key personnel.

Training Programs by Objective

Cultivate advanced knowledge, skills, abilities or their combination, and proactively approach to problems

We carry out education and training designed to equip employees with the mindset, expertise, and skills they need to carry out their jobs. To ensure that the skills employees acquire are applicable to the work that they perform, we provide coaching in cooperation with the participants' supervisors and training programs for handling challenges directly relevant to their own departments. This gives employees practical skills instead of just knowledge, and allows them to acquire the basic capacity to proactively approach problems.

Demonstrate teamwork and persistently lead to results

We make sure NGK employees have a deep understanding of the NGK Group Philosophy, Vision, and Corporate Business Principles. This not only empowers them to achieve their business targets, but also to consider for themselves the significance of their work and basis for making judgments, and to incorporate it into their own actions with a sense of consent. Smooth communication and cooperative relationships within the workplace are essential for fostering a sense of unity within the NGK and allowing each employee to feel satisfaction with their work. This is why we conduct communication training when employees join NGK or are promoted. NGK also believes that the role of management is critical to team growth. Therefore, we provide leadership training for employees engaged in leading roles in the field, and management training for key personnel. In doing so, we foster the ability to lead teams toward demonstrating teamwork from various perspectives.

Autonomously grow and continuously change oneself and the company

We aim for the NGK to grow further by having each employee think and act on their own, take on challenges, and play an active role. To this end, we provide training that supports employee motivation and career development. The environment in which we work today is changing drastically. So, we implement training that helps employees to understand their own values, characteristics, and skills, consider what they believe their own role should be, and encouraged to take on new challenges, take up new tasks, and work positively toward growth. This includes training and seminars addressing career design for those being promoted, as well as those in their 40s or 50s. In addition to this mandatory training, we are also expanding our online education and career counseling.

Initiatives for Employees to Chart Their Own Career Path ›

Reskilling and Recurrent Training

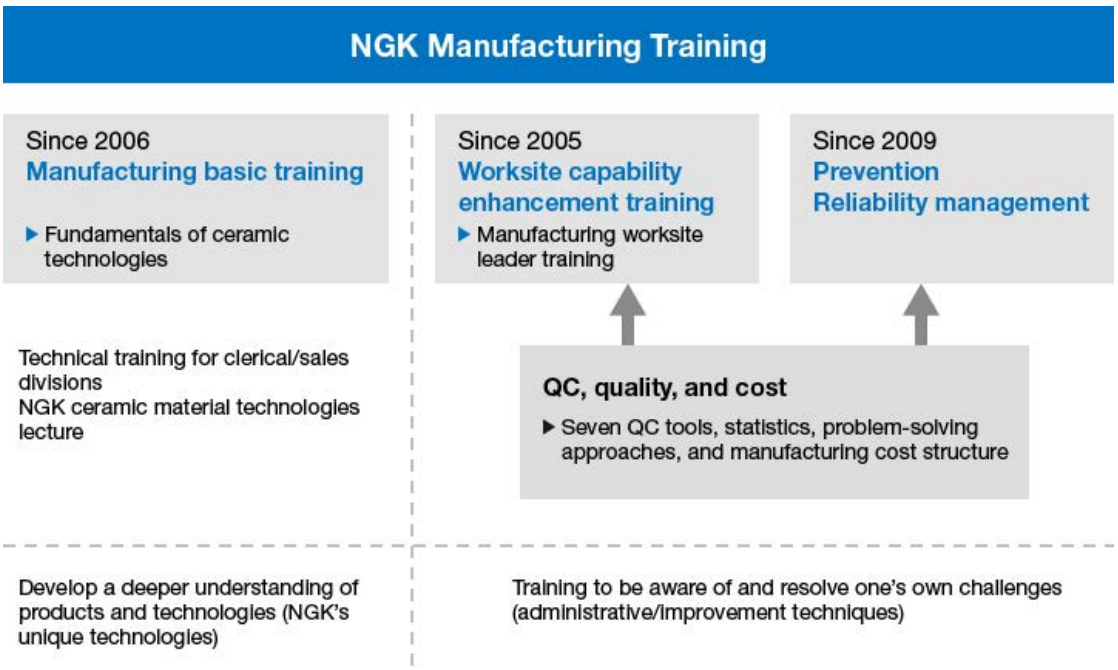
To achieve the NGK Group Vision, we increasingly need skills (including digital skills) that allow us to play an active part in growth fields such as Carbon Neutrality (CN) and Digital Society (DS). As the required skills become more advanced and personalized, we need to provide opportunities to acquire them in a timely manner. We have introduced e-learning courses containing over 10,000 lessons in total, with the aim of helping employees to improve themselves. We also provide licenses to employees who want to learn on their own. To date, more than 700 employees have used e-learning courses for reskilling.

Compliance Requirements in Job Performance

We provide employees with training that communicates to them the responsibilities, which NGK bears as a corporate citizen, as well as what this requires of them as employees of NGK. This training seeks to instill a strong sense of ethics and a commitment to doing what is right.
The fundamentals of NGK business—safety, quality, environment, and CSR—are inculcated from the time an employee joins NGK to every time they receive a promotion so that knowledge ends up being reliably translated into action.

Manufacturing Training

We pursue training aimed at conveying the central importance of safety, the environment, quality, timely delivery, and cost in manufacturing while passing on the traditions and spirit of NGK manufacturing. This training also aims to grow employees into individuals who can support the creation of new value. Towards this end, we provide training in unique technologies that will deepen employees' understanding of NGK products and technologies, as well as provide training in administrative and improvement techniques that will equip employees with the mindset and means to improve their workplaces.
Basic manufacturing training is practical training tied to the actual manufacturing process. It involves teaching participants about ceramic technologies and manufacturing in general at NGK so that they will have a broad perspective, which they can apply in their work.
Worksite capability enhancement training cultivates human resources capable of making managerial contributions as manufacturing worksite leaders and gives supervisor-level Production Dept. employees a chance to learn the skills needed to improve workplace culture and productivity.



Developing Digitally Proficient Human Resources

Based on the NGK Group Digital Vision, we will educate all employees, from management to general employees, in digital transformation (DX), and will develop human resources who are skilled in the use of data (1,000 people by 2030) and human resources to bridge the gap to DX. We provide training by grade level, according to experience and the role served. In the business units, training is segmented into levels such as "Leaders" to drive the pursuit of DX, "Supporters" who assist the leaders, and "Beginners" who learn how to view and process data.

Examples of development measures

- In the "Leaders" development program, employees leave the department they are affiliated with and participate in an internal internship in a specialist division for one year to concentrate on learning data analysis and digital technology.
- New employees learn IT (information technology) skills through e-learning during the first year after they join NGK.

NGK Group Digital Vision ›

Innovation Training

The aim of innovation training is to backcast from the SDGs and social challenges in an environment that is changing drastically, to discover what points to consider with new businesses and the creative thinking that spawns innovation.
In the program for young employees with leadership potential, participants learn methods for working with employees from other companies who have different experiences and value, and overcome these barriers to create and achieve goals together.
It also aims to foster flexible thinking skills and outside-the-box thinking that avoids being trapped by existing ways of thought. Through workshops, participants learn methods and ideas that serve to broaden their minds. We are also constructing a proposal system to ensure that themes which arise during innovation training can actually be developed into new businesses.

Level-Based Training for Corporate Philosophy Education

We conduct training and workshops for all employees at milestones in their career such as hiring and promotion. This is to ensure that everyone working in the NGK Group understands and agrees with the NGK Group Philosophy, and can incorporate it into their various actions and decisions. In FY2023, roughly 700 employees attended courses: from new college graduates, to mid-career hires, and people who receive a promotion or have been recruited from fixed-term manufacturing contract employees to full-time employees.

Company History Training

This training program looks at the history of NGK in order to reexamine the origins of the corporate activities built up by our predecessors, to reinforce our shared values, and then to prompt participants to think about how this impacts the way they go about their jobs.
The program for Group S (section chiefs) uses videos to encourage participants to deeply consider what makes up the essence of NGK, with a focus on themes such as quality and globalization.
English language videos are being developed, and programs geared towards Group companies outside Japan are being introduced.

English Training for New Employees

Since FY2011, we have been providing global training courses for all new regular-position employees with the goal of rapidly cultivating globally capable human resources.
These courses first train participants in developing global mindset and English ability, which aim to help them form a concrete image of what it means to work globally and help them acquire the communication methods and intercultural understanding necessary in global setting. Then, we conduct English language training which, in addition to English ability, helps participants cultivate practical business skills like giving presentations in classes whose composition facilitates effective learning at each level.

Time spent learning English per new career-track hire (FY2023 results)

88 hours per year

* New employees with advanced English skills spent 16 hours per year and did not take English language courses

Practical Overseas Training / Global Seminars

NGK conducts practical training over a period of six months at Group companies outside Japan with the aim of developing globally competent personnel. 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. (This training was suspended during FY2022/FY2023 due to the impacts of the COVID-19 pandemic.)
In addition, we also conduct a wide variety of global training aimed at employees engaged in overseas work, including future candidates for overseas postings. This training covers themes such as language acquisition training, studies on individual areas, and acquisition of global standard communication and management skills based on intercultural understandings.

FY2023 Training Outcomes

Training Participant Summary (total number of people)

Average Annual Hours Spent for Training per Full-Time Employee

Average Annual Cost of Training per Full-Time Employee

Social Data Collection

Health Management

Basic Approach

The NGK Group strives to promote employees' health through the NGK Group Health Declaration: "Developing dynamic, people-friendly work environments and a health-conscious corporate culture."

Health Declaration of the NGK Group

At NGK, we consider employee health and safety to be of fundamental importance to the company's operation and are, therefore, proactive about developing dynamic, people-friendly work environments and a health-conscious corporate culture, which contribute to better health for each and every employee.

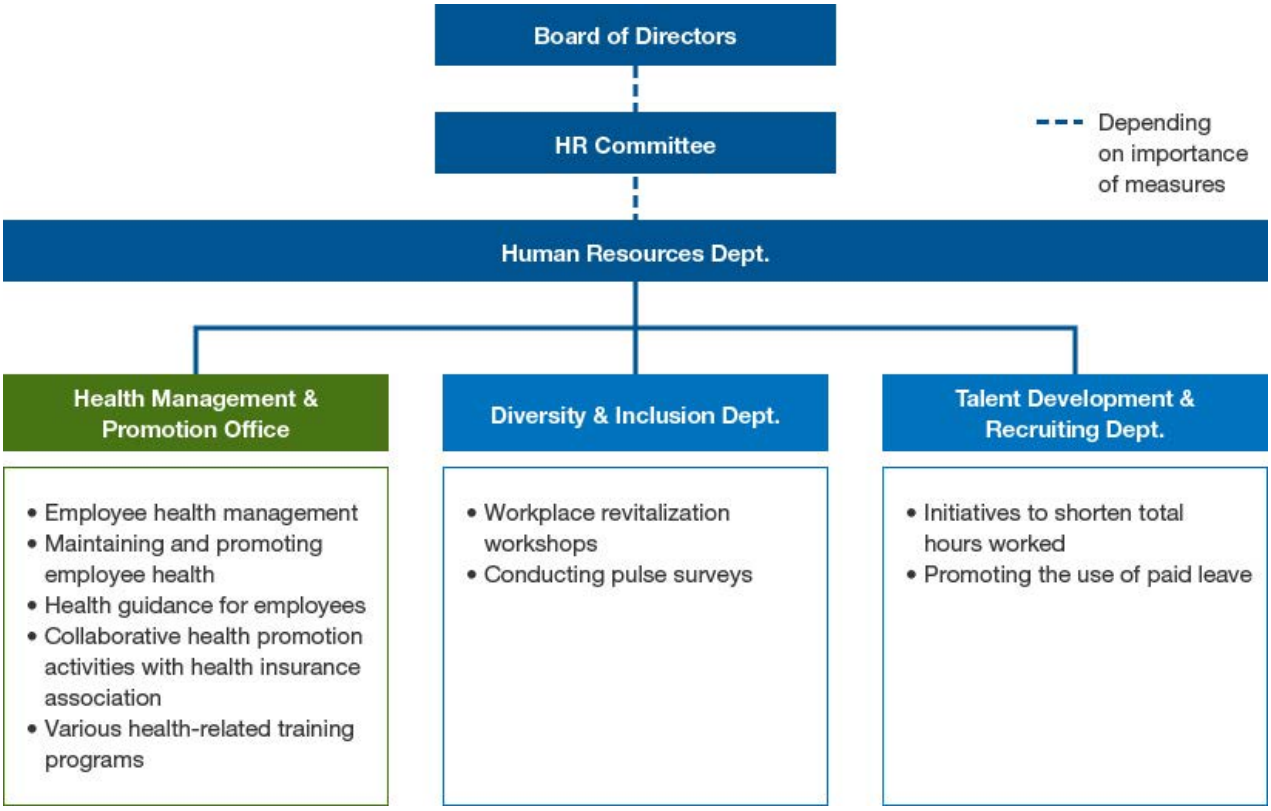
- Provide a workspace that is both people-friendlyand work-friendly
- Cultivate a health-consciouscorporate culture for executives, employees, and their families
- Promote early detection and early intervention for health concerns
- Offer support for mental health and wellbeing

NGK Insulators, Ltd.
President
Shigeru Kobayashi

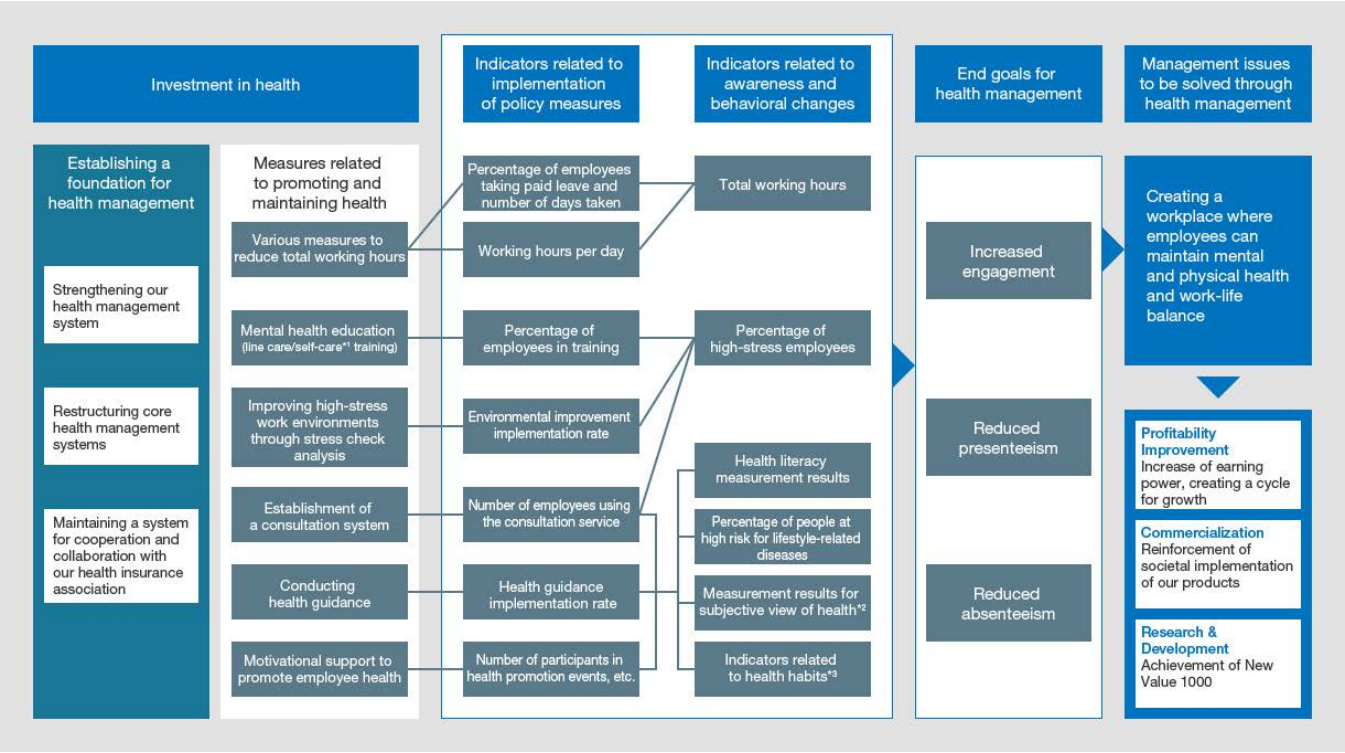
Health Management Promotion System

Medical professionals, such as chief industrial physicians and industrial health nurses under the Health Management & Promotion Office, and the Health Management Secretariat collaborate with the labor union and the health insurance association to promote health management at NGK. This is overseen by the director responsible for the Human Resources Department.

Health Management Promotion System Chart



Health Management Strategy Map



* 1 Line care: Managers and supervisors improve the workplace environment and provide counseling related to the mental health of their subordinates.
Self-care: Understanding your own stress and mental health, and preventing, reducing, or dealing with your own stress.

* 2 Measurement results for subjective view of health: Self-assessed health status

* 3 Indicators related to health habits: Percentage of people who exercise regularly, smoke, drink responsibly, and get a satisfactory amount of sleep

Initiatives to Shorten Total Hours Worked

Reducing Long Work Hours

In July 2016, NGK lowered the maximum amount of overtime work to 70 hours per month (with an upper limit of 300 hours per half-year). To this end, employees are, as a rule, not allowed to work for more than seven days straight and are not allowed to do overtime on their twice-a-week refresh days. If either of these are necessary, they must get permission from their bosses beforehand. To prevent employees from working excessively long hours, there must be an interval period of at least 10 hours between shifts of late-night work.
In FY2023, there were 32 cases of overtime work exceeding our upper limit, but no cases which violated legal regulations (Full year results excluding seconded employees).

- Exceeded 70 hours: 9 cases (including 2 general employees) *Statutory limits not exceeded
- Exceeded 300 hours: 23 cases (including 15 general employees) *Statutory limits not exceeded

Response to Increase in Overtime Work

Every year, NGK discloses actual working hours and leave taken to the labor union. We then exchange ideas and discuss what measures to take.
If it appears that the amount of overtime worked is going to exceed 45 hours, we will first hold a labor-management meeting to determine the reason for the increase in overtime, then implement measures such as evening out work periods and workloads or adding additional workers.
Whenever it is determined that employees are actually working long hours, we discuss countermeasures for each worksite with the labor union.
For employees temporarily stationed overseas, as soon as it is discovered that they are working long hours, they are required to submit a written reason and undergo a health examination. This not only serves to maintain the health of employees temporarily stationed overseas, but allows us to determine the cause of the long working hours from the written report, and implement countermeasures to correct the situation.

Hours / Overtime Hours Worked

Social Data Collection

Following Up on Employees Working Long Hours

NGK provides employees working long hours, including non-regular and part-time employees, with ongoing opportunities to meet with industrial physicians for health consultations and exams. The results are reported at monthly Safety and Health Committee meetings at each worksite to thoroughly promote the reduction of overtime work.

Number of Employees Having Consultation about Long Work Hours

Social Data Collection

Note: Based on the check, the number of employees having consultations about long work hours in FY2020 was revised to 67.

Promoting Activities Supporting Mental and Physical Health

4 Types of Care for Mental Health

NGK facilitates the widespread implementation of ongoing mental and physical health promotion activities, centering on the four types of care for mental health promoted by the Ministry of Health, Labour and Welfare (MHLW).
In FY2023, we carried out stress checks for all employees.
Actual test results were sent to each department as a Group analysis report. Based on the results of this analysis, we conducted training through e-learning about self-care and line care, and individual follow-ups for each manager for improving the work environment in their own workplace.

4 Types of Care

1	Self-care
2	Line care (care by supervisors) Note: Recent, selective introduction
3	Care by industrial health staff within business sites
4	Care by resources outside business sites

Percentage of Employees Taking Stress Checks

Percentage of Employees with High Stress

Social Data Collection

Position-Based Mental Care Education

With an emphasis on self-care for new employees and young employees, we strive to deepen understanding of mental health by combining self-care and line care for new supervisors and key personnel.
We provide training for key personnel in areas with high occurrences of employee mental health problems with the goal of detecting and treating problems early on and putting these employees on the road to early recovery.

Number of Participants in Position-Based Mental Care Education

Social Data Collection

Promoting Better Health and Wellbeing Among Employees

In addition to annual health exams, NGK holds collaborative health promotion activities* with the health insurance association in efforts to promote better health and physical strength among employees. These activities include health declaration challenges, the use of smartphone health app for individuals (kencom), recreational walks, and online seminars. In FY2023, we streamed online videos from RIZAP about eliminating presenteeism and improving lifestyle habits such as diet and exercise. In addition, we increased the participation rate for the health challenge campaign by expanding those covered to include insured employees and their dependents. We also continue to provide online fitness videos, and conduct our quit smoking campaign.

* An initiative in which health insurance associations work closely with companies and use their respective strengths to create a positive work environment by efficiently and effectively promoting the health and wellbeing of employees and their families.

Rate of Employees Taking Regular Health Exams

Rate of Employees taking Specific Health Checkups

Rate of Employees Eligible for Specific Health Guidance

Rate of Employees Who Completed Specific Health Guidance

Number of Participants in Health Promotion Initiatives

Smoking Rate

Social Data Collection

Response to Infectious Diseases and Other Global Health Problems

There are approximately 450 NGK employees and family members posted overseas, and while the number of business trips by our employees in Japan decreased due to Covid-19, their number is steadily increasing. So, we are cognizant of the possibility of their contracting infectious diseases. To reduce this risk, employees posted overseas and their families, as well as those taking business trips, are provided with health management training by specialists. Participants learn the fundamentals of infectious diseases, are advised to take immunization shots, and are taught ways to avoid contracting Infectious diseases such as HIV/AIDS, malaria, and tuberculosis.

During the influenza season from autumn to winter, employees posted overseas are encouraged to get vaccinated locally. We also offer vaccinations at the in-company clinic.

In addition, in January of FY2022, we provided workplace vaccinations for the fourth round of Covid-19 vaccine injections to approximately 2,000 people. These were not held in FY2023 since mass vaccinations and vaccination at family doctors became available.

Outstanding Health and Productivity Management Company

Since 2019, NGK has been continuously included in the large enterprise category of the Certified Health & Productivity Management Outstanding Organizations Recognition Program jointly promoted by the Ministry of Economy, Trade and Industry (METI) and the Nippon Kenko Kaigi (Japan Health Council).
In addition, the NGK Health Insurance Association has been included in the newly-established SME category of the Certified Health & Productivity Management Outstanding Organizations Recognition Program for three years in a row since 2021.

Aichi Prefecture Advanced Health Management Company

NGK and the NGK Health Insurance Association have earned a designation as an Advanced Health Management Company by the Aichi prefectural government. The aim of this program is to recognize companies and organizations that aggressively pursue health management, in the process increasing the number of companies taking action towards a healthy workforce and increasing the healthy life expectancy of the prefecture's citizens.

Occupational Safety and Health

Basic Approach

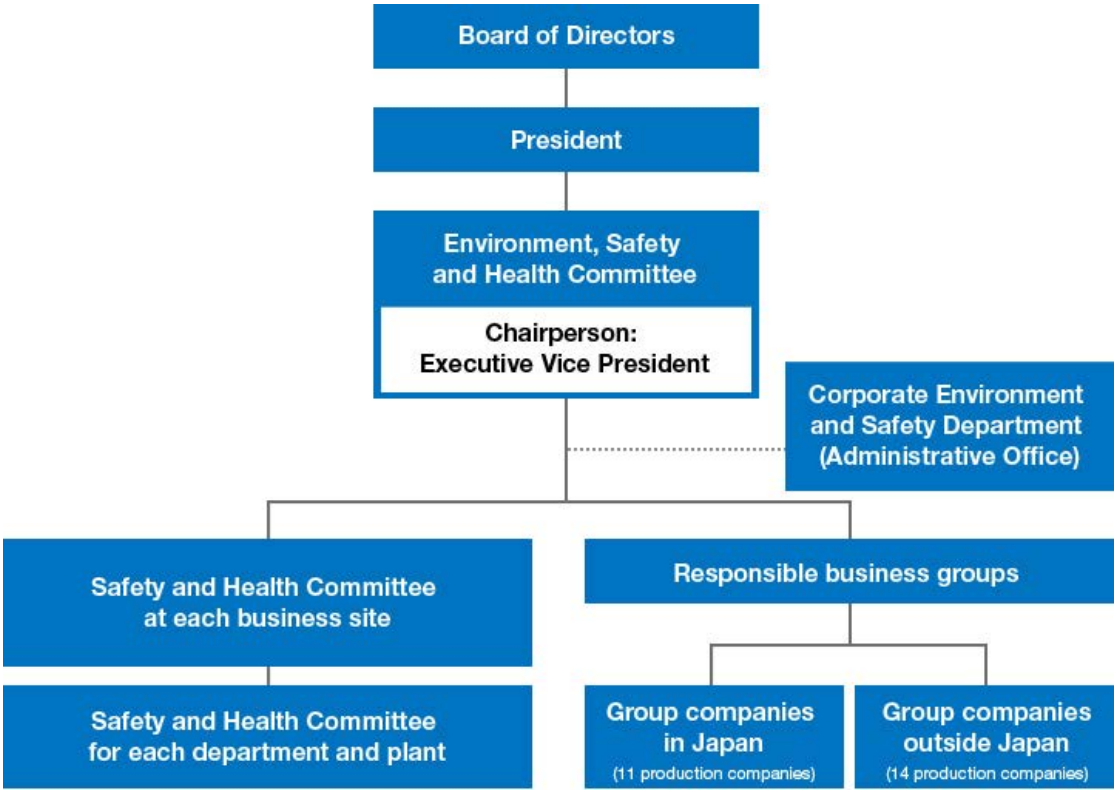
The NGK Group operates an ISO 45001-certified Occupational Safety and Health Management System (OSHMS) in line with its Safety and Health Policy. The OSHMS serves as a mechanism for the ongoing, systematic achievement of worker safety and health initiatives. By strictly implementing this system and conducting risk assessment-based safety measures, we strive to raise the level of occupational safety and health throughout the entire Group, including for contractors on-premises.

Safety and Health Policy ›

Structure to Promote Safety and Health Management

NGK established the Environment, Safety and Health Committee chaired by the Executive Vice President who is the person in charge of safety and health in order to raise the level of the entire Group's safety and health. This committee meets at least biannually to deliberate and determine the Group's initiatives and action plan as well as monitor the results of activities, situation of work-related accidents and countermeasures. The committee reports to the Board of Directors which also monitors its activities. Moreover, every business site holds Business Site-Specific Safety and Health Committee meetings monthly led by relevant labor representatives of every department and attended by General Safety and Health Manager (directors of each site/vice presidents). In addition to promoting awareness of Group activities and action plans, the committees investigate and deliberate important matters related to safety and health unique to each business site, and then penetrate and implement findings through the Safety and Health Committee members of each workplace.

Safety and Health Management Organizational Chart



Enhancing Safety and Health Activities

NGK views the enhancement of safety and health activities as one of its top priorities. In addition to rigorous operation of our occupational safety and health management system, we developed our third three-year action plan to start from FY2023. It is built around the key themes of compliance, governance, and risk reduction. We are promoting safety and health activities with our action policies defined as ensuring thorough legal compliance, further enhancing our Group governance structure, and preventing serious accidents and disasters. Concerning preventing serious accidents and disasters, in addition to comprehensive risk assessments covering existing facilities and operations, when introducing new facilities or operations or modifying operations, we conduct a thorough risk assessment in advance to eliminate risks or reduce them to an acceptable level. All of NGK's business locations and plants as well as manufacturing Group companies in Japan and overseas have obtained ISO 45001 certification.

Results of FY2023 Activities

Medium-Term Action Plan	Fiscal year implementation items	Key Activities
Compliance	Strengthen mechanisms for compliance with laws and regulations	We carried out training for managers/ representatives, in addition to conducting general surveys and corrective action at all business units including Group companies concerning compliance with laws and regulations related to safety and health. Moreover, we have put internal regulations in place to prevent non-compliance with laws and regulations, such as failure to report to the government. At the same time, we have begun to build a database that will allow us to respond to all legal requirements related to safety and health.
Group Governance	Strengthen safety and health functions in each business group	We have clarified the division of roles between the department which oversees safety and health at the head office, and the safety and health departments in each business group. We are now setting up an autonomous structure that enables the safety and health departments at each business group to manage/promote safety and health at factories and group companies under their jurisdiction.
Risk reduction	Reduce the risk of serious accidents or injuries	We comprehensively extracted and identified high severity risks related to getting caught and entangled in rotating machinery, electric shock and explosion. Not only did we implement operational solutions for curtailing risks (administrative measures), but also completed equipment countermeasures (upgrades and modifications) except for at some of our locations outside of Japan. We have also established various internal regulations related to safety management.

Numerical Targets

NGK has set the following numerical targets for 2024.

- Zero fatal or serious accidents throughout the Group
- Group-wide lost-worktime accident severity rate of 0.01 or less

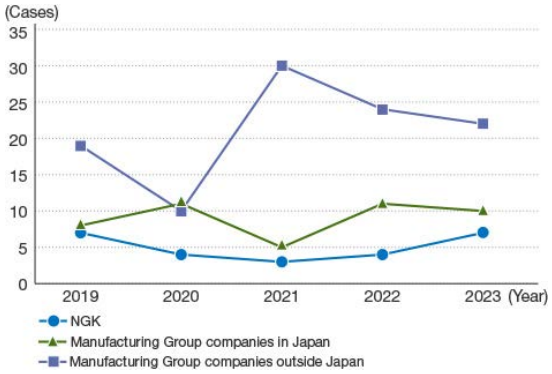
In 2023 we achieved 0 fatal or serious accidents throughout the Group. However, the group-wide lost-worktime accident severity rate was 0.012, so we did not achieve our target (0.01 or less).

Work-Related Fatalities

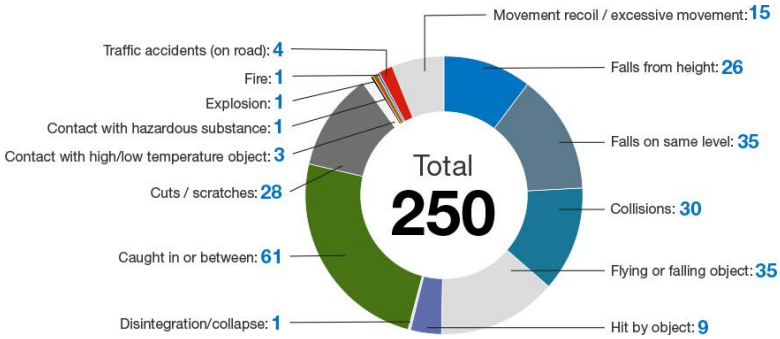
Work-Related Accidents

Social Data Collection

Trends in Work-Related Accidents



Work-Related Accidents by Type (past 7 years; NGK Group consolidated)



Response to Work-Related Accidents

In the event of a work-related accident, following the NGK Group's rules, we promptly notify relevant departments and convene the Work-Related Accident Deliberation Committee pursuant to the regulations o f each company. This ensures that we are able to thoroughly identify the cause and implement countermeasures against future recurrence.
In 2023, there were 39 non-lost worktime and lost worktime accidents Groupwide. Broken down, these included seven at NGK, 10 at manufacturing Group companies in Japan, and 22 at manufacturing Group companies outside Japan. The number of times employees were caught in rotating machinery (which was something we addressed as a priority activity) was 2, and both victims were severely injured. These accidents occurred due to a failure to conduct thorough risk assessments of the work and to uncover serious hidden risks. Therefore, we have begun new training for personnel in charge of manufacturing sites which aims to strengthen their ability to discover potential hazards during risk assessments.

Number of Contractor Accidents Severe Enough to Result in Lost Worktime

Number of Contractor Deaths

Severity Rate (Number of Lost Workdays per 1,000 Hours Worked)

Lost Time Injury Frequency Rate (Employees)

Occupational Illness Frequency Rate

Social Data Collection

External Certification of Occupational Safety and Health Management System

To continuously raise the level of occupational safety and health in workplaces, we encourage companies in the NGK Group to acquire international certification for occupational safety and health management systems.
In 2017, NGK's Nagoya Site received the first ISO 45001 private certification in Japan. In 2018, all other NGK sites and plants in Japan received ISO 45001 certification and JIS Q 45100 certification.
As of June 2021, all 26 manufacturing Group companies in Japan and overseas have completed the acquisition of ISO 45001.

Acquisition of Occupational Safety and Health Management System Certification

Social Data Collection

Safety and Health Training

NGK provides training to employees and assists with their acquisition of qualifications/licenses required under safety and health laws and regulations. Our training includes various in-house programs on safety and health along with curriculum sourced from outside NGK. In FY2023, a total of 3,842 employees received in-house group training on safety and health standards. The breakdown includes rank-based training/training for newly-promoted employees (671), danger prediction training (3,104), and ISO 45001 internal audit training (67). This excludes training conducted by each department such as worker training, job rotation training and risk assessment training, external training for crane operators and the like, and safety officer training.

Main Training Programs

Training programs	Training curriculum
Legal training	Group training mainly for managers through videos that provide a summary of safety and health related laws and regulations
Internal safety and health training	In-house group training required of employees, including training on dust, KYT (hazard prediction training), risk assessment, etc.
External safety and health training	Training conducted offsite required of employees, including for workplace supervisors, low-voltage electricity, organic solvents, Video Display Terminal (VDT), lift/crane operators and various operation chiefs
New employee training	Group training for new graduate hires and individual training provided to newly assigned employees including temporary employees
Job rotation training	Training conducted by each department for employee transfers and work changes
Stratified education / Promotion training	Training provided at the time of promotion, including new promotions as well as newly appointed assistant managers, managers, general managers, and directors of business sites Stratified education training is provided to new graduate hires, mid-career hires, and workers promoted to regular employee status
Internal auditor training	Group training for the purpose of developing and improving the level of ISO 45001 internal auditors
Worker training	Training and exercises for frontline work are conducted to evaluate skill level and certification of work proficiency
Frontline management training (safety officers)	(See below)
Danger-Prediction Training Center	(See below)

Acquisition of Safety Officer Qualification

To increase their managerial skills, we train managers to become Safety Officers through e-learning and encourage them to obtain Safety Officer Qualification*. As of FY2023, 447 managers in research & development and engineering departments, including general managers, plant managers, and managers of the manufacturing department had obtained this qualification. We also encourage engineers of design and maintenance departments for in-house equipment and production engineers at our plants to obtain Safety Assessor Qualification*.

* Safety Officer Qualification / Safety Assessor Qualification: Qualifications established and administered by The Institute of Global Safety Promotion (IGSAP). The qualifications certify that an individual possesses understanding and knowledge of safety or knowledge and skills of machinery based on international safety standards, respectively.

Establishment of Danger-Prediction Training Center

To prevent injuries mainly among young workers and inexperienced workers, in 2018 we established the 450 m^2 Danger-Prediction Training Center at our Chita Site, where we launched safety training led by specialist employees with experience outside of NGK.
The training center features equipment that enables employees to safely experience work-related injuries that have occurred in the past including caught in rotating machinery or in equipment and work-related accidents that could lead to serious injury such as electric shock or explosions. Combined with classroom learning using computer graphics, the training center provides practical programs where employees can refine their sensitivities toward dangers.
In 2020, we introduced a virtual reality system for experiencing dangers and conducted a training program that combines this with conventional training approaches. This training was rolled out to Group companies in Japan as well, and as of FY2023, a running total of 9,431 NGK Group employees have participated.

Social Contribution Activities

The NGK Group establishes herein the NGK Group Social Contribution Activities Policy and will actively engage in various activities to realize a sustainable society.

Basic Approach

We will help to solve social issues through our business activities in various regions across the globe. In addition, as a member of society, with the aim of being a corporate citizen trusted by local communities, we will strive to cooperate and collaborate with diverse partners and undertake social contribution activities in response to needs in each region.

NGK Group Social Contribution Activities Policy ›

The NGK Group's social contribution activities are promoted by the General Affairs Department under the leadership of the ESG Management Committee. NGK collects reports from Group companies in and outside Japan on the social contribution activities they have conducted in various places. In FY2023, a total of 59 reports were received.

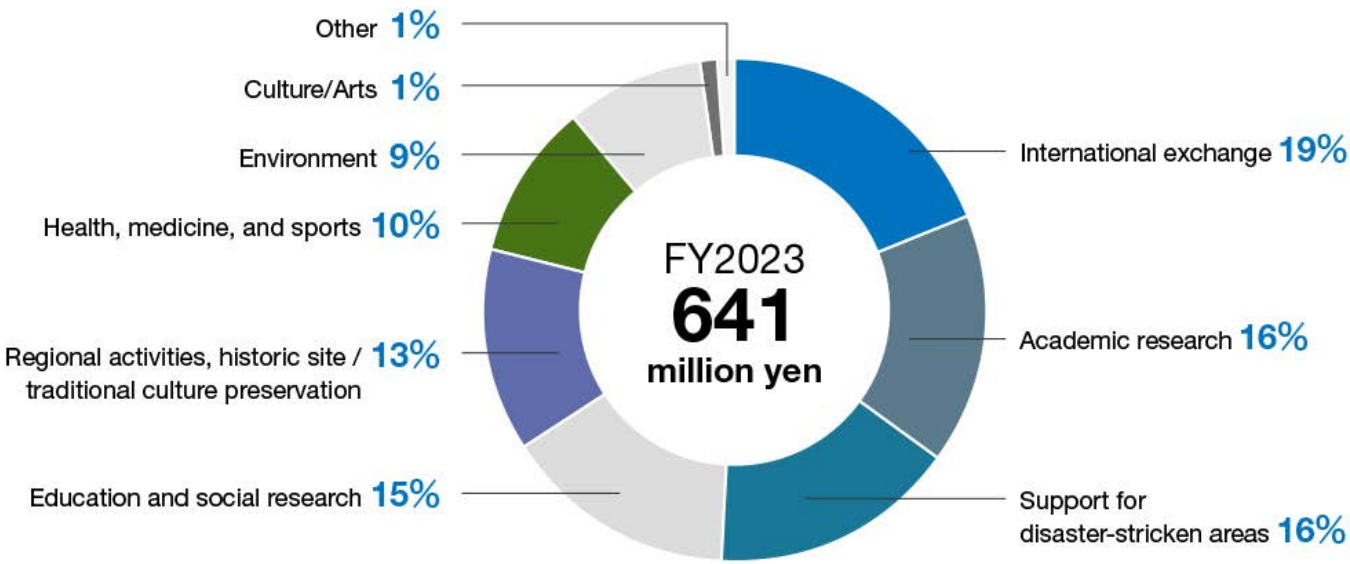
Social contribution expenditures

Number of social contribution programs

Number of collaborations with NPOs/NGOs

Social Data Collection

Breakdown of Activities



NGK's Social Contribution Activities

Providing Scholarships and Assistance to International Students [People, Education, and Community Relations]

In 1998, NGK established the NGK Foundation for International Students to facilitate the cultivation of individuals who will contribute to the development of the international community. Through the Foundation, NGK continues to provide assistance with housing and scholarships to overseas students visiting Japan.
The impetus for the Foundation's establishment stems from gratitude for the warm community support and hospitality shown to NGK's first employees and families posted overseas at the time of its initial overseas expansion 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.
On April 1, 2022, this Foundation became a Public Interest Incorporated Foundation. In FY2023, we provided housing to 33 students from five countries, and scholarships (non-repayable) to 22 students from 11 countries.

The NGK Foundation for International Students ›

Exchange Between Supported Students, Local Residents, and Employees

To advance international relations between supported students, local residents, and employees, since the year 2000, we have held annual exchange meetings where international students introduce their native languages and cultures. In FY2023 we held seven exchange meetings at our dormitory and Ishiki Cosmos Futaebori Class (a Japanese class for foreign children living in Komaki, Aichi Prefecture and housed in one of the rooms of the NGK company dormitory). A total of 30 people participated, including residents living near the dormitory, and students and teachers from our Ishiki Cosmos Futaebori Class. Chinese language classes were held six times at our dormitory, and participants in the Ishiki Cosmos Futaebori Class were introduced to Indonesian culture. As of FY2023 a cumulative total of 1,083 people have participated in such exchange meetings.

Communication After Support Ends

In FY2023, we distributed NGK International Friendship Club Members Cards to international students whose support had ended. In addition, to maintain relationships with international students after support

ends, we sent New Year's cards with updates on the Foundation and NGK to around 300 exchange students and alumni who have received support in the past.

Japanese Language Learning Support for Foreign Children Living in Japan [People, Education, and Community Relations]

In FY2022, NGK began providing support for foreign children living in Komaki, Aichi Prefecture to learn Japanese. We are working in coordination with the private organization Ishiki Cosmos Support Study Group, which is based in the city.
In addition, we dispatched teaching assistants to local Japanese classes sponsored by the Aichi Employers' Association, Central Japan Economic Federation, and other organizations (6 organizations). And NGK employees who have been stationed overseas leveraged their knowledge and skills in the Japanese language classes held in NGK's employee dormitory and one of the rooms in our facilities to help boost children's language learning proficiency to that necessary for studying the subjects taught in Japanese schools.

FY2023 Results

Classroom		Location	Activity Time	No. of Children	No. of NGK Registered Assistants	No. of Times Held
Ishiki Cosmos Futaebori Class		NGK Komaki Dormitory	Every Wednesday and Friday, 5:00 pm to 7:30 pm	18	24	90
Local Japanese Classes	MIRAI Project	NGK Chita Kosei Hall	Every Thursday, 4:00 pm to 6:00 pm	9	8	18
	Aiueoguchi in Oguchi-town, Aichi Minato Japanese School in Nagoya-city, Aichi Children's Japanese in Nagakute-city, Aichi Kodomo nihongo hiroba in Higashiura-town, Aichi	Differs for each class	Differs for each class	Differs for each class	5	-

Support for Wheelchair Tennis [Community Relations]

NGK supports wheelchair tennis as part of our support for persons with disabilities and for local sports. We assist talented wheelchair tennis athletes based in Aichi Prefecture in various ways, such as helping to fund their travel inside Japan and overseas. From 2020 to 2022, we established a new hard court and clay court and renovated the clubhouse and outdoor restrooms at the NGK Group company-operated Moronoki Tennis Club (located in Midori-ku in Nagoya City) to make them wheelchair-friendly, since the facilities are open to wheelchair tennis athletes and aficionados alike. NGK has also signed an official partnership agreement with the Japan Wheelchair Tennis Association (JWTA), with whom we work to sponsor annual events, competitions, and other opportunities for expanding and developing the sport of wheelchair tennis. In FY2023, we held a pep rally for wheelchair tennis athletes, cooperated in the Wheelchair Tennis Experience Program organized by the Social Welfare Corporation Nagoya City Rehabilitation Agency, and held an exchange event for "new mixed doubles*" athletes, and talk events for the athletes we support.

* A game style which pairs a wheelchair athlete with an able-bodied athlete

Reforestation Activities “NGK Minnano Mori Mizunami” [Environment, Community Relations]

NGK carries out reforestation activities promoted by the Western Tono Beekeeping and Forestry Cooperation Promotion Roundtable in forest owned by NGK in Hiyoshi-cho, Mizunami City, Gifu Prefecture (17 ha). We carry out these reforestation activities with the aim of contributing to regional development. Through them, we hope to create a rich natural environment, promote beekeeping which is one of the local industries in the Tono region, and create opportunities to interact with local residents and learn about the natural environment. In FY2023, we conducted wildlife surveys (plants and animals), and felled hazardous trees and maintained major roads to preserve biodiversity, and create rich and healthy forest resources.
Also, we partnered with beekeeping operations to promote local industry, and aimed to raise environmental awareness through contact with the natural environment. To these ends, we conducted activities in cooperation with the Gifu Prefecture program “Creating forests in collaboration with companies” which included forest workshops, forest cleanups by NGK employees, and the like.
In March 2024, part of the “NGK Minnano Mori Mizunami” —an area of approximately 5.6 ha which includes spring-fed wetlands and hardwood forests of local origin—was designated a Nationally Certified Sustainably Managed Natural Site by the Ministry of the Environment.

自然共生サイト認定
30by30

Basic Information on Employees

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Number of employees*1	NGK	-	4,224	4,316	4,382	4,547	4,775	Persons
	NGK Group	-	20,000	19,695	20,099	20,077	19,540	Persons
Number of employees by gender	NGK*2	Total	4,529	4,650	4,745	4,877	5,086	Persons
		Male	3,951	4,046	4,132	4,258	4,427	Persons
		Female	578	604	613	619	659	Persons
	NGK Group	Total	20,409	20,195	20,656	20,450	19,533	Persons
		Male	16,010	15,920	16,393	16,074	15,486	Persons
		Female	4,399	4,275	4,263	4,376	4,047	Persons
Number of employees by employment type	NGK	Full-time employee	4,529	4,650	4,745	4,877	5,086	Persons
		Contract employee	464	287	272	280	206	Persons
		Temporary employee	395	302	372	491	477	Persons
Employee composition by region	NGK Group	Japan	39	37	37	38	39.9	%
		Europe	21	25	25	24	24.3	%
		North and Central America	15	15	15	16	15.1	%
		Asia	23	22	22	21	20.4	%
		Other	1	1	1	1	0.4	%
Retention rate of new hires after 3 years	NGK	Total	93.5	92.8	90.3	88.7	97.1	%
		Male	95.2	92.7	91.0	90.7	96.6	%
		Female	85.1	93.3	87.9	81.8	100	%
Average age	NGK	Total	38.8	39.2	40.0	39.7	40.2	Years old
		Male	39.0	39.3	40.1	39.9	40.3	Years old
		Female	38.6	38.6	39.6	39.4	39.5	Years old
Average length of service	NGK	Total	13.7	14.3	15.6	15.5	15.0	Years
		Male	13.7	14.3	15.6	15.5	15.1	Years
		Female	14.1	14.1	15.6	15.5	14.6	Years
Average salary	NGK	-	7,770,318	7,635,830	7,696,997	8,240,174	8,553,909	Yen
Labor union membership rate*3	NGK	-	97	98	98	98	98	%
Employee turnover rate (Full-time employees only, excluding retiring employees)	NGK	Total	1.5	1.3	1.3	1.7	1.4	%
		Male	1.3	1.2	1.1	1.5	1.2	%
		Female	2.8	1.7	2.0	2.9	2.7	%
Voluntary resignation rate (Full-time employees only, excluding retiring employees)*4	NGK	Total	1.5	1.2	1.2	1.5	1.2	%
		Male	1.3	1.1	1.0	1.3	1.0	%
		Female	2.6	1.6	2.0	2.7	2.3	%

Employee Engagement

Satisfaction the Survey on Workplace Vitality*5	NGK	-	-	59.3	-	59.4	59.4	%
Survey on Workplace Vitality: career autonomy score	NGK	Target	-	-	-	3.5 or more	3.5 or more	points
		Result	-	-	-	3.60	3.66	points
Survey on Workplace Vitality: advancement of women in the workplace score	NGK	Target	-	-	-	3.5 or more	3.5 or more	points
		Result	-	-	-	3.45	3.50	points
Survey on Workplace Vitality: score related to utilization of diversity	NGK	Target	-	-	-	3.5 or more	3.5 or more	points
		Result	-	-	-	3.34	3.37	points
Survey on Workplace Vitality: score related to opportunities to take on challenges	NGK	Target	-	-	-	3.5 or more	3.5 or more	points
		Result	-	-	-	3.26	3.30	points
Survey on Workplace Vitality: score related to psychological safety	NGK	Target	-	-	-	3.5 or more	3.5 or more	points
		Result	-	-	-	3.71	3.73	points
Survey on Workplace Vitality: score related to worthwhileness of work	NGK	Target	-	-	-	3.5 or more	3.5 or more	points
		Result	-	3.49	-	3.49	3.48	points
Survey on Workplace Vitality: score related to work-life balance	NGK	Target	-	-	-	3.5 or more	3.5 or more	points
		Result	-	3.53	-	3.52	3.59	points

*1 Includes employees from outside companies who have been temporarily assigned to the NGK Group, but excludes employees from the NGK Group who have been temporarily assigned to outside companies.
*2 Excludes employees from NGK Group companies or outside companies who have been temporarily assigned to NGK, but includes employees from NGK who have been temporarily assigned to NGK Group companies or outside companies.
*3 Number of union members / Number of employees in NGK excluding managers (both include manufacturing contract employees)
*4 The figures for voluntary resignation rate are calculated from the number of people resigning due to personal circumstances in one year / total number of employees.
*5 We conduct this survey every other year. This is the ratio of employees who answered positively (5 or 4 points on a 5-point scale evaluation) to the "worthwhileness of work" question.

Work-Life Balance

Childcare Support Measures

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Number of childcare leave takers	NGK	Total	40	64	79	157	172	Persons
		Male	19	35	56	127	143	Persons
		Female	21	29	23	30	29	Persons
Rate of employees that return to work after childcare leave	NGK	Total	100	100	99	100	100	%
Shortened working hours during childrearing	NGK	Number of leave takers	64	62	79	69	76	Persons

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Rate of employees taking child care leave	NGK	Male*2	-	-	-	91	98	%
		Female*3	-	-	-	103	87	%

*1 Fiscal year preceding disclosure : The fiscal year immediately preceding the fiscal year in which the announcement is made (Fiscal year)
*2 Total percentage of male workers whose spouses gave birth in the fiscal year preceding disclosure, who took long-term childcare leave or used leave for childcare purposes that year
*3 Percentage of female workers who gave birth in the fiscal year preceding disclosure, who took childcare leave that year
*4 The rate of female childcare leave take-up is the ratio (b/a) of employees who took childcare leave for the first time during the fiscal year prior to the disclosure to the number of employees who had children born during the same fiscal year (a). (b) may exceed 100% because it includes employees who had children born in the fiscal year prior to the disclosure but did not take childcare leave during the fiscal year prior to the disclosure, but instead took childcare leave the following fiscal year.
*5 "-" indicates that the percentage was not calculated before the mandatory disclosure of childcare leave status.

NGK Unique System

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Return to work after childbirth lump-sum payment	NGK	25	26	38	19	21	Persons
System for taking annual paid leave in hourly increments (for employees working shortened hours)	NGK	62	58	73	68	76	Persons
Childcare leave for fathers using accumulated vacation days	NGK	31	54	53	100	102	Persons
Pre-maternity leave interview	NGK	24	20	31	29	30	Persons
Interview before returning to work	NGK	25	25	32	27	24	Persons
Leave for accompanying a spouse's overseas assignment	NGK	2	0	1	4	3	Persons
Maternity gift	NGK	218	260	223	224	245	Persons
Babysitter expense subsidy	NGK	11	31	28	43	46	Persons
Childcare Concierge (available to those who live in the Tokyo metropolitan area)	NGK	1	0	0	0	0	Persons
Priority parking spaces to support childcare	NGK	40	40	41	37	46	Persons
Lump-sum payment for early return	NGK	5	3	4	4	4	Persons

Nursing Care Support

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Number of employees taking long-term nursing care leave	NGK	Total	1	1	1	3	2	Persons
	NGK	Male	1	0	0	2	0	Persons
	NGK	Female	0	1	1	1	2	Persons
Number of employees taking nursing care leave	NGK	Total	1	0	34	17	5	Persons
	NGK	Male	1	0	23	13	4	Persons
	NGK	Female	0	0	11	4	1	Persons

Diversity & Inclusion

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
New graduate hires*1	NGK	Total	143	141	105	139	168	Persons
		Male	115	108	89	123	134	Persons
		Female	28	33	16	16	34	Persons
Rate of female employees among new graduate hires*2	NGK	Total	28	34	17	14	23	%
		Sales and management-related; target 40%	44	52	33	29	50	%
		Engineering-related; target 20%	24	27	13	11	17	%
Mid-career hires	NGK	Total	63	26	37	109	118	Persons
		Male	49	20	34	95	99	Persons
		Female	14	6	3	14	19	Persons
Number of manufacturing contract employees promoted to being regular employees	NGK	Total	41	15	18	16	18	Persons
Rate of mid-career hires	NGK	Total	42	23	34	47	45	%
Rate of female employees*3	NGK	-	12.8	13.0	12.9	12.7	13.0	%
	NGK Group	-	21.6	21.2	20.6	21.3	20.7	%
Number of key personnel (managers)	NGK	Total	900	969	1,028	1,085	1,150	Persons
		Male	874	940	993	1,044	1,107	Persons
		Female	26	29	35	41	43	Persons
		Dept. managers or higher	1	1	4	4	4	Persons
		Rate of female employees	2.9	3.0	3.4	3.8	3.7	%
	Group companies outside Japan	Rate of female employees	20.2	23.1	23.1	19.4	21.3	%
Female Directors	NGK	Total	13	9	9	9	9	Persons
		Female	1	1	1	1	1	Persons
		Rate	7.7	11.1	11.1	11.1	11.1	%
Rate of employees with disabilities	NGK, NGK YU-Service, NGK Ceramic Device	Number of people	135	145	155	160	172	Persons
		Employment rate	2.20	2.35	2.46	2.43	2.55	%

*1 Note: Excluding new graduate temp-to-perm employees
*2 Applies to regular-position employees
*3 Rate among all employees

Number of Female Key Personnel (Managers) as of March 31, 2024

Item	Category	NGK	Group companies in Japan	Group companies outside Japan	Total	Unit
Number of female key personnel (employees in managerial positions)	Total	1,150	292	647	2,089	Persons
	Male	1,107	288	509	1,904	Persons
	Female	43	4	138	185	Persons
	Rate of female employees	3.7	1.4	21.3	8.9	%

Wage Gap between Male and Female Employees in FY2023

Item	Scope	Category	FY2023	Unit
Wage gap between male and female employees	NGK	All employees	79.0	%
		Regular employment employees	78.9	%
		Part-time and fixed-term employees	97.6	%

Item	Scope	Category	Average salary for men	Average salary for women	FY2023	Unit
Wage gap between male and female employees (by manager level and non-manager level)	NGK	Manager level (basic salary only)	7,497,247 yen	7,355,633 yen	98.1	%
		Manager level (basic salary + other financial incentives)	12,172,829 yen	11,590,610 yen	95.2	%
		Non-manager level (basic salary only) *counting for full-time employees only	4,293,918 yen	4,092,891 yen	95.3	%
		Non-manager level (basic salary + other financial incentives) *counting for full-time employees only	7,667,856 yen	6,595,807 yen	86.0	%

Internal Job Application System

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Job application system	NGK	Number of jobs posted	28	9	59	80	77	Cases
		Number of recruits	37	13	86	108	87	Persons
		Number of applicants	18	15	50	56	60	Persons
		Number of successful applications	7	6	17	25	30	Persons

Human Resource Development

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Training participant summary (total number of people)	NGK	Total	4,685	2,527	8,201	6,377	4,760	Persons
		Key personnel	813	480	665	719	902	Persons
		General employees	3,873	2,047	7,536	5,658	3,858	Persons
Average annual hours spent for training per full-time employee		Total	21.4	6.0	28.0	18.0	11.4	Hours
		Key personnel	12.3	4.2	18.0	11.0	9.9	Hours
		General employees	23.7	6.4	31.0	20.0	11.7	Hours
Average annual cost of training per full-time employee		-	53,000	22,000	29,522	31,138	39,498	Yen

Occupational Safety and Health

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Number of work-related fatalities	NGK	-	0	0	0	0	0	Persons
	Manufacturing Group companies in Japan	-	0	0	0	0	0	Persons
	Manufacturing Group companies outside Japan	-	0	0	0	0	0	Persons
	Group total	-	0	0	0	0	0	Persons
Number of work-related accidents	NGK	Lost worktime accidents	0	1	2	3	3	Cases
		Non-lost worktime accidents	7	3	1	1	4	Cases
		Total	7	4	3	4	7	Cases
	Manufacturing Group companies in Japan	Lost worktime accidents	1	3	3	9	3	Cases
		Non-lost worktime accidents	7	8	2	2	7	Cases
		Total	8	11	5	11	10	Cases
	Manufacturing Group companies outside Japan	Lost worktime accidents	13	7	24	21	16	Cases
		Non-lost worktime accidents	6	3	6	3	6	Cases
		Total	19	10	30	24	22	Cases
	Group total	-	34	25	38	39	39	Cases
Number of work-related accidents at the level of lost worktime accidents and more serious in contractors	NGK	-	0	1	0	0	0	Cases
	Manufacturing Group companies in Japan	-	0	0	0	0	1	Cases
	Manufacturing Group companies outside Japan	-	3	1	2	2	3	Cases
	Group total	-	3	2	2	2	4	Cases
Number of fatalities in contractors	NGK	-	0	0	0	0	0	Persons
	Manufacturing Group companies in Japan	-	0	0	0	0	0	Persons
	Manufacturing Group companies outside Japan	-	0	0	0	0	0	Persons
	Group total	-	0	0	0	0	0	Persons
Severity rate (number of lost workdays per 1,000 hours worked)	NGK Group	-	0.012	0.004	0.115	0.030	0.012	Days/hours x 1,000
	NGK	-	0.000	0.002	0.388	0.021	0.014	Days/hours x 1,000
	Manufacturing Group companies in Japan	-	0.006	0.004	0.004	0.032	0.001	Days/hours x 1,000
	Manufacturing Group companies outside Japan	-	0.020	0.006	0.035	0.033	0.015	Days/hours x 1,000
	All industries (Japan, sites with 1,000 or more employees)*1	-	0.03	0.03	0.04	0.03	0.02	Days/hours x 1,000
	Manufacturing industry (Japan, sites with 1,000 or more employees)*1	-	0.04	0.03	0.03	0.02	0.02	Days/hours x 1,000
Lost time injury frequency (number of lost time injuries per 1 million hours worked)	NGK Group	-	0.34	0.28	0.67	0.79	0.55	Persons/hours x 1,000,000
	NGK	-	0.00	0.10	0.19	0.28	0.28	Persons/hours x 1,000,000
	Manufacturing Group companies in Japan	-	0.13	0.46	0.43	1.27	0.42	Persons/hours x 1,000,000
	Manufacturing Group companies outside Japan	-	0.56	0.31	0.93	0.86	0.72	Persons/hours x 1,000,000
	All industries (Japan, sites with 1,000 or more employees)*1	-	0.47	0.69	0.69	0.62	0.56	Persons/hours x 1,000,000
	Manufacturing industry (Japan, sites with 1,000 or more employees)*1	-	0.26	0.28	0.31	0.30	0.32	Persons/hours x 1,000,000
Occupational illness frequency rate (n/million work hours)	NGK	-	0.00	0.00	0.00	0.00	0.00	%
Acquisition of occupational safety and health management system certification*2	NGK	ISO 45001 and JIS Q 45100	100	100	100	100	100	%
	11 manufacturing Group companies in Japan	ISO 45001 and JIS Q 45100	100	100	100	100	100	%
	14 manufacturing Group companies outside Japan	ISO 45001	73	93	100	100	100	%

*1 Statistics on work-related accidents from Japan's Ministry of Health, Labour and Welfare.
*2 Nagoya Site, Chita Site, Komaki Site, Ishikawa Plant, Mitake Plant

Mental and Physical Health Promotion

Item	Scope	Category	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Hours / overtime hours worked (Annual fixed working hours: 1,919 hours)	NGK general employees	Annual actual working hours	2,059	2,044	2,044	2,016	1,999	Hours
		Average overtime work per month	23.7	21.6	23.4	22.8	20.8	Hours
	NGK general employees	Average overtime work per month	2,056	2,057	2,059	2,029	2,013	Hours
		Average overtime work per month	23.6	22.0	23.8	23.2	21.0	Hours
	NGK manufacturing divisions	Average overtime work per month	2,067	2,061	2,056	2,024	2,006	Hours
		Average overtime work per month	24.4	22.8	24.1	23.2	20.9	Hours
	NGK non-manufacturing divisions	Average overtime work per month	2,052	2,037	2,038	2,011	1,997	Hours
		Average overtime work per month	23.2	21.1	23.1	22.6	20.7	Hours
Paid leave: number of days used, utilization rate	NGK	Average overtime work per month	14.1	11.9	13.8	15.1	14.5	Days
		Utilization rate	77.5	67.5	76.5	83.3	88.1	%
Number of employees having consultations about long work hours*1	NGK	All	78	67	37	27	37	Persons
Rate of employees taking stress checks	NGK	-	95.9	94.1	95.3	95.4	96.4	%
Rate of employees taking stress checks	NGK	-	10.7	9.9	9.0	9.5	7.9	%
Rate of employees taking stress checks	NGK	All	614	585	517	565	583	Persons
		New hires	143	140	105	139	168	Persons
		General employees	339	362	307	311	287	Persons
		Key personnel	132	83	105	115	128	Persons
Regular health exams*2	NGK	Total target employees	4,855	4,894	4,728	4,910	5,138	Persons
		Total target employees	4,855	4,894	4,728	4,910	5,138	Persons
		Total target employees	100	100	100	100	100	%
Rate of taking specific health checkups*3	NGK employees and families	-	87.2	85.7	88.7	89.7	-	%
Rate of recipients of specific health guidance*3		-	14.3	15.6	13.3	14.0	-	%
Rate of completion of specific health guidance*3		-	56.1	57.5	59.1	57.5	-	%
Number of participants in health lectures*4	NGK managers	-	300	-	-	-	-	Persons
Number of participants in health lectures*4	NGK employees and families	-	1,199	1,560	1,505	865	938	Persons
Number of participants in smartphone health apps*4	NGK employees and families	-	1,127	1,134	1,511	1,703	1,917	Persons
Number of participants in recreational walks*4	NGK employees and families	-	223	-	-	-	356	Persons
Online seminars	NGK employees and families	-	-	146	1,002	436	386	Persons
Smoking rate	NGK	-	25.4	23.6	21.9	21.9	21.6	%

*1 Numbers of people shown are cumulative totals. They also include people who only underwent a health exam.
*2 Including chest X-rays to catch the early signs of tuberculosis.
*3 The FY2023 figures will be released around December 2024.
*4 Initiatives marked with a "-" in a fiscal year were not implemented in that fiscal year.

Quality Management System

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Acquisition of ISO 9001 or IATF 16949 certification/percentage	NGK Group	97	100	100	100	100	%

NGK and the all Business Group production sites, supporting functions, and locations at Group companies in and outside Japan have acquired ISO 9001 or IATF 16949 certification.

Social Contribution Activities

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Social contribution expenditures	NGK Group	2.73	2.96	5.33	7.54	6.41	100 million yen
Number of social contribution programs		13	10	16	10	10	Cases
Number of collaborations with NPOs/NGOs		4	4	3	2	2	Cases

Governance

ESG in the NGK Group Governance

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Corporate Governance System

Basic Approach

NGK Group's basic policy on corporate governance is to ensure legality in business activities and transparency in management. NGK Group has established a structure that can respond swiftly to changes in the business environment and built and maintains shareholder-focused system to ensure fair management.
To put this policy into practice, NGK has chosen the governance structure of a company with an Audit & Supervisory Board. We have established a corporate governance system that increases the effectiveness of corporate governance through debate and deliberation on important matters. This was accomplished by establishing the Executive Committee, ESG Management Committee, Risk Management Committee and various other committees to support the president in making decisions, in addition to the General Meeting of Shareholders, Board of Directors, and Audit & Supervisory Board.
NGK recognizes the need for swift, optimal decision-making and execution to respond to changes in the business environment. We have therefore introduced an executive officer system to segregate the management decision-making and supervisory function from the business execution function to clearly define the roles of and strengthen each function.
To strengthen the supervisory and oversight function of the Board of Directors, we have mandated reporting to Board of Directors from the key committees among committees that handle various risks surrounding NGK. To ensure that the objectives of the Corporate Governance Code are thoroughly implemented, we established the Nomination and Compensation Advisory Committee, Corporate Council, Conference of Outside Directors and Outside Audit & Supervisory Board Members, the Business Ethics Committee, and other committees.
In addition, we have established the NGK Group Corporate Business Principles and NGK Group Code of Conduct to stipulate how everyone working for the NGK Group should execute their jobs so that they abide by society's laws and NGK Group's Articles of Incorporation and comply with corporate ethics. All executives and employees are well versed in the code and are obligated to abide by it.

Corporate Governance Report

Internal Control Systems

The NGK Board of Directors has established the following systems to ensure that directors comply with laws and regulations and NGK's Articles of Incorporation in the execution of their duties. This includes the systems deemed necessary to ensure the appropriateness of NGK's business operations as well as the operations of the NGK Group consisting of NGK and its subsidiaries. The business execution organizational bodies that report to the president are responsible for operating these systems.

Basic Views on Internal Controls System and Status of Development

Steps Taken to Strengthen Corporate Governance

We continue to strengthen the corporate governance system. Enhancements include introducing an executive officer system to improve the management supervision and monitoring functions and other functions, and to provide suggestions on all aspects of management.

April 1999	Established the NGK Corporate Business Principles
April 2003	Revised guidelines into the NGK Group Corporate Business Principles
June 2005	Introduced an executive officer system
	Introduced a stock option
	Introduced an outside officer system
July 2005	Established the CSR Committee
June 2010	Appointed independent officers
July 2011	Revised the NGK Group Corporate Business Principles
April 2015	Signed on to the UN Global Compact
June 2015	Established the Global Compliance Office
December 2015	Established the Nomination and Compensation Advisory Committee, Corporate Council, Conference of Outside Directors and Outside Audit & Supervisory Board Members, and Business Ethics Committee

April 2019	Established the ESG Committee
April 2020	Established the Compliance Committee
	Established the HR Committee
April 2021	Formulated the NGK Group Vision
	Formulated the NGK Group Human Rights Policy
	Established the NGK Group Basic Guidelines for Compliance Activities
June 2021	Outside directors increased to 1/3rd of Board of Directors
	An outside director made the chair of the Nomination and Compensation Advisory Committee
April 2022	Established the ESG Management Committee
June 2022	Introduced a Restricted Share Compensation Plan
April 2023	Established the Risk Management Committee
	Formulated the NGK Group Basic Sustainability Policy

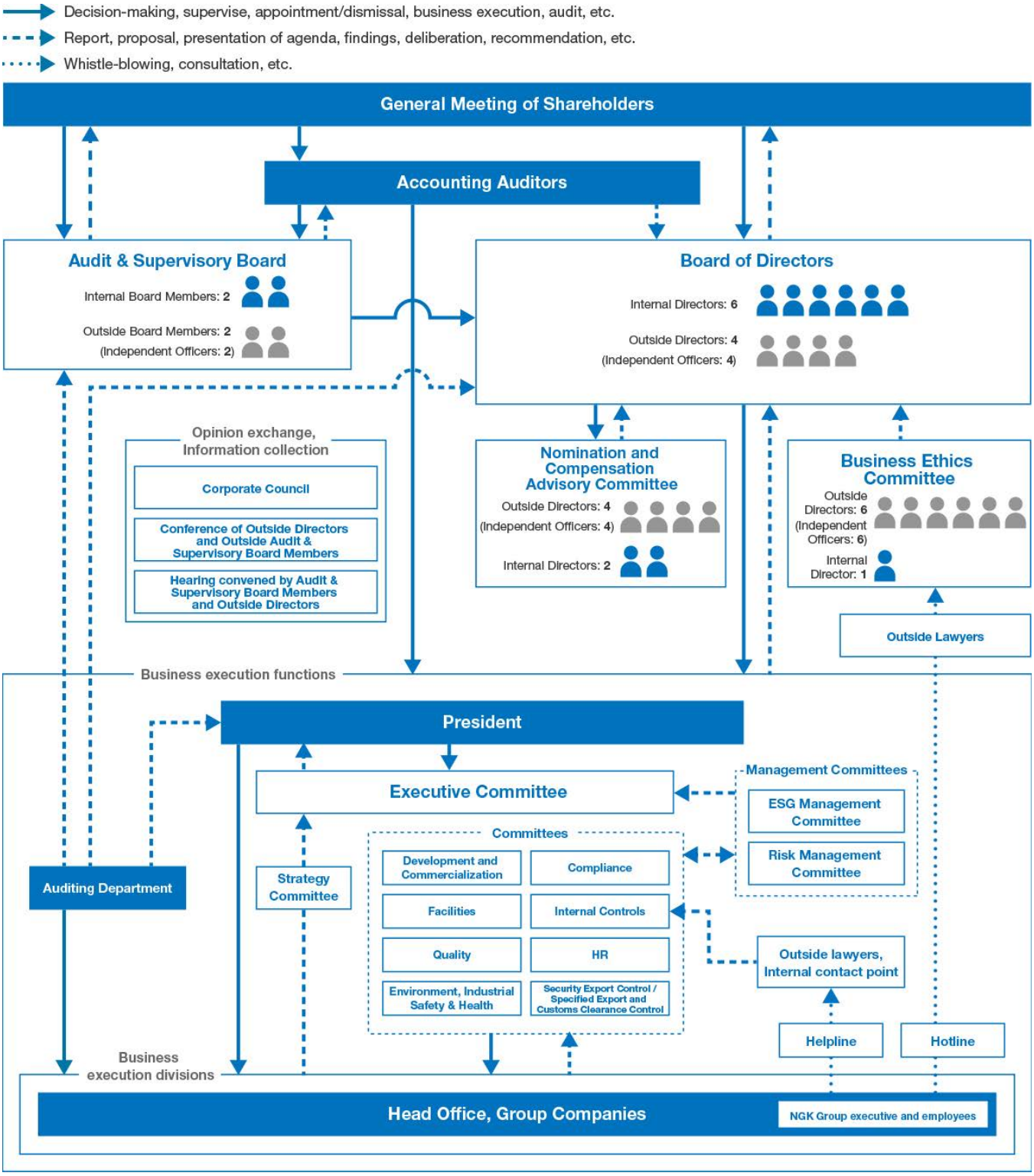
June 2017	Appointed one additional outside director
October 2018	Appointed a Chief Compliance Officer
January 2019	Revised the NGK Group Corporate Business Principles

July 2023	Revised the NGK Group Corporate Business Principles and established the NGK Group Code of Conduct
June 2024	Increased ratio of female directors to 30%

Corporate Governance System

We have established the following system to ensure legality in business activities and transparency in management. This system makes it possible to respond swiftly to changes in the business environment and maintains a shareholder-focused system to ensure fair management.

Corporate Governance Organizational Chart



Policy on Cross-Shareholdings

NGK maintains cross-shareholding of listed stock that contribute to the long-term business development of our group for the primary purpose of maintaining and strengthening business relationships. Moreover, we maintain strategic cross-shareholding with each company in the Morimura Group, with which we share a founder. Since the Group brand forms a part of our corporate value through its history and philosophy, this arrangement aims to enhance the quality of management for both sides. As part of our portfolio of assets, these all provide the supplemental liquidity deemed necessary by our business plan. While we are always looking to reduce the scope of our cross-shareholding in the interest of asset efficiency, it may fluctuate due to factors including overall business trends, changes in risks, financial conditions, and business relationships with individual parties. Moreover, for stocks, the Board of Directors not only considers the significance of holdings from the perspective of business relationships, but periodically confirms the appropriateness of continued holdings, the safety of ratings, and the efficiency of dividend yields, together with capital policy. Meanwhile, when comparing our capital costs, we do not evaluate stocks alone, but manage return on invested capital (NGK ROIC) for each business with differing risks and expected returns. And we include our cross-shareholding valuations in the balance sheet of each business. We exercise voting rights accompanying cross-shareholdings from the perspective of whether the content of a proposal would be detrimental to shareholder interests. We also pay attention to whether the company whose shares we hold is managed with an emphasis on increase corporate value and shareholder profits.
We sold 1,109 million yen in two specified investment stocks in FY2023 as a result of this verification.

Number of Stocks and Balance Sheet Amount (March 31, 2024)

	Number of stocks	Total balance sheet amount (million yen)
Unlisted shares	39	2,161
Shares other than unlisted shares	39	71,877

Stocks for Which Number of Shares Increased in FY2023

	Number of stocks	Total acquisition amount for increase in number of shares (million yen)	Reason for increase in number of shares
Unlisted shares	1	999	Due to new investments in companies contributing to the creation of our new products and businesses
Shares other than unlisted shares	2	4,602	Due to a change in the classification of shares of affiliated companies following a decrease in the investment ratio, and due to the fact that unlisted shares we held were newly listed on the stock exchange in FY2023.

Stocks for Which Number of Shares Decreased in FY2023

	Number of stocks	Total acquisition amount for decrease in number of shares (million yen)
Unlisted shares	1	-
Shares other than unlisted shares	2	1,109

Note: The decrease in unlisted shares is due to the fact that unlisted shares we heldwere newly listed on the stock exchange.

State of Each Organization

Board of Directors

Composition of Board of Directors (As of June 30, 2024)

Directors ›

Director Attributes and Committee Membership (as of June 30, 2024)

Name	Age	Stocks held etc.		Meeting attendance record		
		Number of shares of the Company held	Number of stock acquisition rights owned (Equivalent number of shares)	Board of Directors	Nomination and Compensation Advisory Committee	Business Ethics Committee
Taku Oshima	67	30,000	66,000	◎ 100% (15/15)	100% (4/4)	
Shigeru Kobayashi	63	30,126	21,000	100% (15/15)	100% (4/4)	
Chiaki Niwa	64	24,000	27,000	100% (15/15)		
Ryohei Iwasaki	64	24,000	36,000	100% (15/15)		
Hideaki Shindo	59	13,000	10,000	100% (15/15)		
Mayumi Inagaki	60	8,741	5,000	-		

Name	Age	Stocks held etc.		Meeting attendance record		
		Number of shares of the Company held	Number of stock acquisition rights owned (Equivalent number of shares)	Board of Directors	Nomination and Compensation Advisory Committee	Business Ethics Committee
Emiko Hamada	65	5,000	-	100% (15/15)	◎* 100% (4/4)	◎* 100% (5/5)
Hiroshi Sakuma	68	-	-	-	-	-
Noriko Kawakami	65	3,000	-	-	-	-
Kengo Miyamoto	56	-	-	-	-	-

Notes: 1. ◎ indicates chair or committee chair.
2. Meeting attendance shown is for FY2023.

* The selection was made at the Board of Directors meeting held on June 26, 2024.

Ratio of Independent Outside Directors

Target ratio of Independent Outside Directors	Result	Name
One-third of the Board of Directors	1/3 or more	Emiko Hamada, Hiroshi Sakuma, Noriko Kawakami, Kengo Miyamoto

Ratio of Female Directors

Target Ratio of Female Directors	Result	Name
30% of Directors	30%	Mayumi Inagaki, Emiko Hamada, Noriko Kawakami

Director/Audit and Supervisory Board Member Skill Matrix and Reasons for Item Selection

Name Position	Attributes			Field of Experience							Specialized knowledge			Main reason for filling in a circle (Experience, qualifications, etc.)
	Years in Office	Gender	Independent Officer	Business Management	Sustainability	Overseas business International experience	Marketing	Manufacturing technology R&D	Carbon Neutrality	Digital Society	Finance	Legal Compliance	HR/ Labor	
Taku Oshima Chairman	10 years	Male		○	○	○		○	○				○	•Representative Director and President of NGK •NGK Manufacturing Technology Division (including experience in overseas assignments), and Business Divisions (including expertise related to carbon neutrality) •Chairman of the Aichi Employers' Association, and outside director for major infrastructure businesses
Shigeru Kobayashi President	4 years	Male		○	○	○	○		○					•NGK Business Divisions (including experience in management of overseas subsidiaries, and expertise related to carbon neutrality) •Chairperson of NGK ESG Management Committee
Chiaki Niwa Executive Vice President	9 years	Male		○	○			○	○	○		○		•Officer in-charge of NGK Manufacturing Technology Division, Research & Development Division, Digital Transformation Division, and Safety, Quality & Environmental Management Division
Ryohei Iwasaki Executive Vice President	15 years	Male		○	○	○	○		○	○			○	•NGK Business Divisions (including experience in domestic sales, management of overseas subsidiaries, and expertise related to carbon neutrality and a digital society) •Officer in-charge of NGK Human Resources Department, General Manager of Corporate Planning Office
Hideaki Shindo Director and Senior Vice President	3 years	Male			○	○	○				○			•Officer in-charge of NGK Finance and Accounting Department and ESG Promotion Department •NGK Business Divisions (including experience in management of overseas subsidiaries) •General Manager of NGK Corporate Planning Office
Mayumi Inagaki Director and Senior Vice President	—	Female			○							○		•Officer in-charge of NGK Auditing, Group Compliance, Legal, and Intellectual Property departments
Emiko Hamada Outside Director	7 years	Female	○	○	○	○		○	○	○				•R&D department of major electronic components company (including expertise in carbon neutrality and a digital society), and outside director of same company •Professor of engineering at national university graduate school, and management of research projects at national research & development institute •Ph.D. (Engineering), MBA
Hiroshi Sakuma Outside Director	—	Male	○	○	○	○	○		○				○	•CEO of business group for major trading company •Manager of global company (including expertise related to carbon neutrality)
Noriko Kawakami Outside Director	—	Female	○		○	○		○	○	○				•Product Development department at major industrial plant business (including expertise in carbon neutrality and a digital society) •Ph.D. in Engineering, Bachelor of Engineering (Electrical and Electronic Engineering), and fellow of the American Institute of Electrical and Electronics Engineers (IEEE)
Kengo Miyamoto Outside Director	—	Male	○		○	○						○	○	•Lawyer (Japan; New York, USA; New South Wales, Australia)
Nobumitsu Saji Audit & Supervisory Board Member	3 years	Male			○	○	○				○	○	○	•Certified Fraud Examiner •Officer in-charge of NGK Auditing, Group Compliance, Legal, and Intellectual Property departments •NGK Business Divisions (including experience in business planning and overseas labor relations), and Finance and Accounting Department (including experience in overseas assignments)
Naoya Yagi Audit & Supervisory Board Member	1 year	Male			○	○	○				○	○		•Head of NGK Auditing Department, Corporate Planning Department, and Finance and Accounting Department (including experience in overseas assignments)
Masayoshi Sakaguchi Audit & Supervisory Board Member, Outside	5 year	Male	○	○	○							○	○	•Head of Administrative Agency (Commissioner-general of National Police Agency) •Chairperson of large-scale foundation
Takashi Kimura Audit & Supervisory Board Member, Outside	2 year	Male	○	○	○					○	○	○	○	•Manager of major financial institution and IT company •Auditor of listed company

Director/Audit and Supervisory Board Member Skill Matrix and Reasons for Item Selection

Reasons for selection as field of experience/specialized knowledge

Corporate management	We believe that experience in and knowledge about corporate management in particular are essential to ensure legality in business activities and transparency in management, as well as promote healthy risk-taking and effectively supervise appropriate decisionmaking and business execution.
Sustainability	Our management is centered on ESG (Environmental, Social, Governance) to realize the NGK Group Vision. We believe that experience and knowledge in the sustainability field in particular are essential to correctly recognize the ESG factors and other sustainability issues of the NGK Group and to connect these to the enhancement of our medium- to long-term corporate value by appropriately supervising and addressing initiatives aimed at sustainability issues.
Overseas business/ International experience	We believe that experience in overseas business or other international experience in particular are essential to provide appropriate advice and effectively supervise business execution in the business of the NGK Group supplying materials such as ceramics and related products to a wide range of areas including overseas.
Marketing	Reinforcing societal implementation of our technologies and thereby commercializing products are indispensable for the realization of the NGK Group Vision. We believe that experience and knowledge gained through work including marketing in the sales or planning field in particular are essential to provide appropriate advice to the above activities and effectively supervise business execution.
Manufacturing technology R&D	Creating new businesses early and encouraging innovation in production processes are indispensable for the achievement of New Value 1000 (aiming to attain 100.0 billion yen of sales in newly launched businesses in 2030) laid out in the NGK Group Vision. We believe that experience and knowledge in the manufacturing technology or R&D field in particular are essential to provide appropriate advice to the above activities and effectively supervise business execution.
Carbon neutrality	We have formulated the NGK Group Environmental Vision, aiming to build a main business in the field related to carbon neutrality (CN) through the transformation of our business structure, which is set forth in the NGK Group Vision, and aiming to contribute to the realization of “CN,” a “recycling-oriented society,” and “harmony with nature,” which are required by society, through our business activities. We believe that experience and knowledge regarding carbon neutrality in particular are essential to provide appropriate advice to, manage, and effectively supervise business strategies for achieving these objectives.

Digital	We have formulated the NGK Group Digital Vision, aiming to build a main business in the field related to digital society (DS) through the transformation of our business structure, which is set forth in the NGK Group Vision, and aiming to become a company where the use of data and digital technology will be commonplace in 2030, by positioning digital transformation (DX) as the driving force for our business transformation and accelerating DX throughout the NGK Group. We believe that experience and knowledge regarding digital technology in particular are essential to provide appropriate advice to, manage, and effectively supervise business strategies for achieving these objectives.
Finance	The NGK Group will strive to enhance its enterprise value by accelerating the transformation of its business portfolio through the proper allocation of management resources as well as promoting three initiatives: enhanced profitability of capital, secured growth, and the enhancement of non-financial value. We believe that specialized knowledge in finance in particular is essential to provide appropriate advice to, manage, and effectively supervise financial strategies for promoting and achieving these objectives.
Legal Compliance	We have established the NGK Group Corporate Business Principles and NGK Group Code of Conduct to stipulate how everyone working for the NGK Group should execute their jobs so that they abide by society's laws and the Company's Articles of Incorporation and comply with corporate ethics. It is the Board of Directors' responsibility to ensure appropriate management by monitoring the status of compliance with these laws and ethics. The Board of Directors is also required to identify a number of risks that can occur in daily business activities and appropriately manage such risks. Therefore, we believe that specialized knowledge in legal compliance in particular is essential.
HR/Labor	The NGK Group aims to add new value to society by developing an enriched and lively workplace environment where personnel with diverse experiences and values can play active roles, and each personnel autonomously embraces challenges and elevate each other. In addition, we have established the NGK Group Human Rights Policy to ensure that the human rights of all people affected by the NGK Group's business activities will not be violated, promoting initiatives for respect for human rights. We believe that specialized knowledge regarding human resources and labor in particular is essential to provide appropriate advice to, manage, and effectively supervise human resources strategies for promoting and achieving these objectives.

Nomination and Compensation for Directors and Audit & Supervisory Board Members ›

Board of Directors Diversity Policy

The Articles of Incorporation specify a maximum of 15 directors on the NGK Board of Directors. NGK does not discriminate on the basis of gender, age, nationality, and race. Based on this policy, NGK strives to enhance diversity in both gender and internationality of the Board of Directors by electing women directors and directors who possess experience in the management of overseas subsidiaries. NGK also strives to ensure the independence of the Board of Directors by specifying that one-third or more of directors be independent outside directors.
NGK deems the following director skills necessary: Practical experience and demonstration of leadership in areas in which the NGK Group operates its business; professional expertise in finance, legal affairs, human resources and labor, information and communications, and other areas. We also think it is necessary to have highly independent outside directors who possess a high degree of expertise in legal affairs or corporate finance, or who possess knowledge of international affairs, trends in technology, and corporate management. The skill matrix (expertise) of the current Board of Directors is shown above.

Activities of Board of Directors

No. of members: 10; Convened 15 times in FY2023

The Board of Directors is composed of ten directors (seven male, three female; one-third or more of directors are outside directors). It discusses and votes on matters designated under the Companies Act, NGK's Articles of Incorporation and Rules for the Board of Directors (These matters include company-wide unified budgeting, strategic planning such as dissolution, mergers, and alliances of the company, appointing and dismissing representative directors, and authorizing business reports and financial statements etc., the disposal and acceptance of transfer of important assets, the appointment and removal of important employees, etc.). The Board also monitors the job performance of all company directors. The chair of the Board of Directors is a non-executive director. In addition, both the full-time and outside members of the Audit & Supervisory Board attend meetings of the Board of Directors and provide their opinions when necessary.

The key topics and time allocated for each category in FY2023 were as follows.
[Medium- to Long-Term Issues and Group Vision]

- Identifying Materiality
- Initiatives for creation of new business (Progress report on New Value 1000)
- Initiatives for business portfolio
- Intellectual property strategy

[Financial Results, Budget, and Finances]

- Budget and financial results
- Sale of long-term shareholdings
- Report on IR/SR activities, etc.

[Environmental, Social, Governance (ESG)]

- Formulation of NGK Group Basic Sustainability Policy
- Progress report on the 5th Five-Year Environmental Action Plan
- Information disclosure based on TCFD
- Formulation of Anti-trust law compliance program

[Committee Report]

- Report on major committee activities

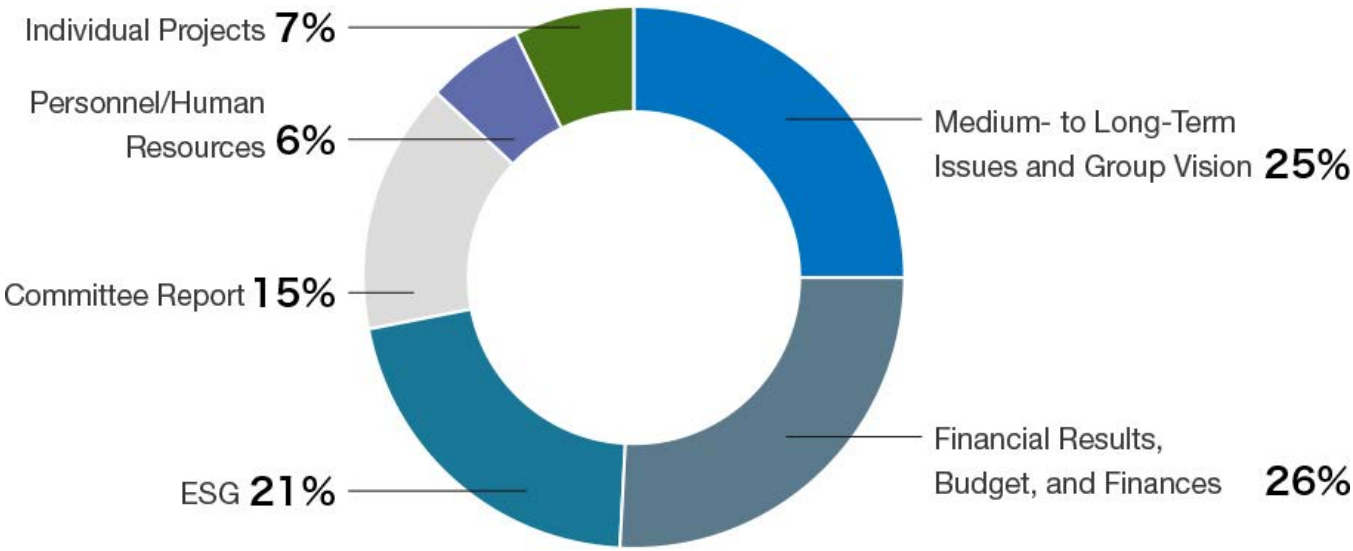
[Personnel/Human Resources]

- Organization and Personnel
- Formulation of NGK Group Human Capital Management Policy

[Individual Projects]

- Investment in production facilities, R&D, etc.
- Revision of company regulations

Time Allocated to Key Topics



Audit & Supervisory Board / Audits

Composition of the Audit & Supervisory Board (As of June 30, 2024)

Name	Age	Number of shares of the Company held	Number of stock acquisition rights owned (Equivalent number of shares)	Board of Directors	Audit & Supervisory Board meeting	Nomination and Compensation Advisory Committee	Business Ethics Committee
Nobumitsu Saji	65	5,000	7,000	100% (15/15)	◎ 100% (14/14)	–	–
Naoya Yagi	59	4,243	–	100% (11/11)*	100% (10/10)*	–	–
Masayoshi Sakaguchi	66	–	–	100% (15/15)	100% (14/14)	◇ 100% (4/4)	100% (5/5)
Takashi Kimura	69	–	–	100% (15/15)	100% (14/14)	–	100% (5/5)

Notes: 1. ◎ indicates the chairman.
2. ◇ indicates attendance as an observer.
3. Meeting attendance shown is for FY2023.

* This applies to the board of directors and board of auditors held after the appointment on June 26, 2023.

Audit Policy and Audit Plan

At the beginning of each fiscal year, the Audit & Supervisory Board formulates an audit policy and audit plan, and sets important audit items. For FY2024, these are as follows.

[Audit Policy]
The Audit & Supervisory Board and each of its members focus on monitoring management risks to ensure that NGK's internal control systems function properly in light of the business environment and other conditions, and that the entire group can be maintained in good health. This includes checking our crisis management systems for natural disasters, as well as various other risk cases. Especially because three years have passed since the NGK Group Vision was formulated, we believe that it is vital to check on its progress and permeation both inside and outside the company.
We base our audits on managing risk during execution of day-to-day business and confirming the rationality of management decisions. Where necessary, we conduct investigations into individual matters, and work to improve governance.

[Important Audit Items]
(1) NGK Group Vision

1. The status of ESG-related initiative penetration
2. The progress of new business, business restructuring, etc.
3. Business-specific risk awareness and reasonableness of the management decision-making process

(2) Confirm framework for handling risk management and readiness to face future changes

Status of Audits by Audit & Supervisory Board Members

No. of members: 4; Convened 14 times in FY2023

The Audit & Supervisory Board is composed of four Audit & Supervisory Board members (all male). Audit & Supervisory Board members supervise directors' decision-making process and job performance, by attending meetings of the Board of Directors and other important meetings, receiving reports from directors, employees, etc. and requesting explanations where necessary. In addition, they review the establishment and operation of so-called internal control systems, and confirm the appropriateness of accounting auditors' auditing methods and results.

The major resolutions and reports for FY2023 were as follows.
[Resolutions]

- Audit & Supervisory Board members' audit policy and audit plan and audit reports of the Audit & Supervisory Board
- Consent to the proposal for the appointment of Audit & Supervisory Board members
- Consent to the compensation, etc. for the Accounting Auditor
- Confirmation of proposals and documents to be submitted to the General Meeting of Shareholders
- Consent to comprehensive advance agreement process for non-assured engagement provided by the auditing firm to which the accounting auditors belong and its network firm

[Reports]

- Report on audit activities by full-time Audit & Supervisory Board members
- Audit plan by the Accounting Auditor
- Report on Financial Results by the Finance & Accounting Department
- Financial audit report by the Accounting Auditor
- Report on the results of internal audits by the Auditing Department
- Confirmation of the Convocation notice of the annual shareholder's meeting

Internal Audits

The Auditing Department (19 members: as of March 31, 2024) was established to perform an internal auditing function. The general manager of the Auditing Department is a member of the Internal Control Committee. The Auditing Department audits the status of business execution in NGK and each domestic and overseas Group company based on audit plans approved by resolution of the Board of Directors, and reports the results of audits to the President, Board of Directors, and Audit & Supervisory Board.
While internal audits are conducted independently of Audit & Supervisory Board audits and accounting audits, the Auditing Department regularly discusses audit policy, plans, and results with Audit & Supervisory Board members and the accounting auditor to improve the effectiveness and efficiency of audits. It also compiles the results of individual audits and reports them to the President and Audit & Supervisory Board members whenever necessary. Moreover, because audits in areas such as quality, environment, and safety and health require specialized knowledge, the dedicated departments serving as secretariats of the committees involved with each area perform internal group audits. They report the results of these audits within each committee and report the committee summaries to the Board of Directors.

Accounting Audits

Accounting audits are performed by an auditing firm and include financial statement and internal control auditing carried out in line with the Financial Instruments and Exchange Act and auditing carried out in line with the Companies Act.
Selection of the auditing firm to perform accounting audits was carried out by the Audit & Supervisory Board according to a variety of criteria. Among the key criteria were whether the firm maintains systems and structures in line with the Regulation on Corporate Accounting ("Matters Related to the Performance of Duties of Financial Auditor(s)"); whether it possesses professional expertise and can carry out appropriate auditing while maintaining a position of independence; and whether there are any grounds for dismissal of financial auditors, as per the Companies Act. Based on the results of this confirmation, NGK selected Deloitte Touche Tohmatsu LLC as the current accounting auditor.
In addition to the above criteria for the selection of the accounting auditor, Audit & Supervisory Board members and Audit & Supervisory Board also evaluated the suitability of the accounting auditor from the perspective of whether it communicates with management, Audit & Supervisory Board members, the Finance Department, and Internal Auditing Department, performs Groupwide audits, and addresses risk of fraud appropriately, through the daily audit activities. Based on this, Deloitte Touche Tohmatsu LLC ("Deloitte") has been determined to be qualified to serve as the accounting auditor for NGK.

Board of Directors Audit Advisory Committee

Nomination and Compensation Advisory Committee

No. of members: 6; Convened 4 times in FY2023

The Nomination and Compensation Advisory Committee was established in order to ensure fairness and enhance transparency in officers' personnel matters, the determination of compensation, and other matters as an advisory body to the Board of Directors. The committee receives inquiries from the Board of Directors and then deliberates on personnel matters for directors and the Audit & Supervisory Board members, matters relating to compensation for directors and executive officers, upper limit on the total compensation amount for directors and Audit & Supervisory Board members, and a succession plan for the Chief Executive Officer, etc. The committee reports its results to the Board of Directors. The committee consists of a majority of independent outside directors and a committee chairperson who is selected from among the independent outside directors. It is composed of four male members and two female members. One outside Audit & Supervisory Board member attends committee meetings as an observer to confirm the appropriateness of the deliberation process.

The major matters discussed by the committee in FY2023 were as follows.

- Appointment of directors, representative directors, and directors with specific titles
- Compensation (cash and stock-related compensation) commensurate with the position of each individual director and executive officer
- Amount of performance-linked bonuses to be paid to each individual director in FY2023 State
- State of development of successors to the Chief Executive Officer

Other Various Types of Meeting Bodies

Business Ethics Committee

No. of members: 7; Convened 5 times in FY2023

The Business Ethics Committee is comprised of outside officers and one internal director who is in charge of compliance. The committee conducts necessary investigations into fraudulent acts and violations of laws and regulations involving corporate officers and employees and advises the Board of Directors on how to prevent recurrence. To ensure compliance with competition laws and the Foreign Corrupt Practices Act, the committee makes recommendations to the Board of Directors on building a compliance system and considering compliance activities. The Committee strives to strengthen the compliance system by establishing, in addition to the current Helpline System, a whistle-blowing system (hotline), which is directly linked to the Business Ethics Committee, as a mechanism to prevent any such fraudulent act or violation of laws and regulations. The committee is composed of four male members and three female members.

Corporate Council

No. of members: 12; Convened 2 times in FY2023

The Corporate Council is a council where outside officers and internal directors, and others can exchange opinions. It provides an opportunity for management to actively seek advice from outside officers on various issues concerning management. The council is composed of nine male members and three female members.

Conference of Outside Directors and Outside Audit & Supervisory Board Members

No. of members: 6; Convened 2 times in FY2023

This conference consists only of outside officers and is a conference where outside officers can exchange opinions concerning corporate management issues and other matters to actively contribute to discussions in Board of Directors meetings. The committee is composed of four male members and two female members.

Hearing Convened by Audit & Supervisory Board Members and Outside Directors

No. of members: 8; Convened 13 times in FY2023

Hearings consist of Audit & Supervisory Board members and outside directors. The purpose of these hearings is to collect information from relevant internal personnel concerning the corporate business environment and company issues. The hearing is composed of six male members and two female members.

Business Execution System

Executive Committee

No. of members: 16; Convened 20times in FY2023

The Executive Committee is the body that deliberates necessary matters to assist the president in making decisions. It consists of the president, executive vice presidents, group executives of each business group, the group executive of Corporate NV Creation, the group executive of Corporate R&D, the group executive of Corporate Manufacturing Engineering, directors in charge of each department, and full-time Audit & Supervisory Board members, as well as corporate officers, committee chairs, general managers and division heads designated by the president. Fifteen committee members are male and one is female.

Other Bodies

Note: The number of times held refers to the cumulative total from April 2023 to March 2024.

Strategy Committee Times held: 22	This committee conducts a broad range of discussions aimed at discovering problems and considering solutions concerning issues important to business management, strategy and policy planning, and reporting on the execution status and progress of various businesses and projects.
ESG Management Committee Times held: 6	This body assists the president, who is the ESG Management Committee chairperson, in decision-making about strategy, action plans, and important issues related to NGK Group sustainability (medium-to-long-term), as well as Environmental, Social, and Governance, and Sustainable Development Goals. It also performs deliberation for the presentation of agenda items deemed important to the Board of Directors or the Executive Committee. Note: In April 2022, we renamed the former "ESG Committee" to the "ESG Management Committee." The Committee will more proactively address the NGK Group's sustainability issues and the activities will be appropriately supervised by the Board of Directors.
Risk Management Committee Times held: 3	This body deliberates items necessary to assist the decision-making of the president and Development and Commercialization Committee chair regarding policies, evaluations, budgets, major individual planning, and commercialization projects related to development and commercialization.
Development and Commercialization Committee Times held: 7	This body deliberates items necessary to assist the decision-making of the president and Development and Commercialization Committee chair regarding policies, evaluations, budgets, major individual planning, and commercialization projects related to development and commercialization.
Capital Investments Committee Times held: 10 (Excluding joint meetings of the Development and Commercialization Committee)	This body deliberates items necessary to assist the decision-making of the president and Capital Investments Committee chair regarding the examination and evaluation of policies, budgets, performance, and major individual planning related to capital expenditure and information systems.

Quality Committee Times held: 2	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 chair with decision-making regarding the following items. 1. Determination, revision, or abolition of Quality Policy and Objectives 2. Items pertaining to the prevention of serious quality defects in the market and technological responses after occurrence 3. Items pertaining to the quality assurance framework and avoidance of quality risks in the commercialization of developed products 4. Other quality-related matters determined to be important
Environment, Safety & Health Committee Times held: 2	This body performs overall management of the environment, safety and health for the NGK Group by regularly ascertaining overall conditions, and carrying out the necessary deliberations for making decisions on important policies, formulating action plans, and handling important matters.
Compliance Committee Times held: 3	This body assists the president and Compliance Committee chair with decision-making by deliberating essential matters pertaining to the following. 1. Observance of laws, regulations, and corporate ethics 1.1. Determination, revision, or abolition of basic policies related to the observance of laws, regulations, and corporate ethics Note: Deliberation items for Board of Directors meetings 1.2. Determination of systems, structures, and strict observance of important activities pertaining to laws, regulations, and corporate ethics 1.3. Handling of Helpline matters 1.4. Determination, revision, or abolition of risk management structures pertaining to laws, regulations, and corporate ethics 2. Response to the matters, incidents, or accidents related to laws, regulations, or corporate ethics that are special crisis management matters 3. Other compliance-related issues deemed important by the committee chair

Internal Controls Committee Times held: 3	This body deliberates matters necessary to help the president and Internal Controls Committee chair with decision-making regarding internal controls system assessment and reporting related to financial reporting based on the Financial Instruments and Exchange Act. 1. Determines the scope of reporting for each fiscal year, assessment and reporting schedules, standards to assess internal controls, and other basic matters 2. Summarizes internal controls assessment and drafts internal controls report
HR Committee Times held: 7	This body assists the president with decision-making by examining issue presentation, research reporting, solution development, and other essential matters related to corporate obligations in respecting human rights (issue handling) and the important personnel policies within the NGK Group. 1. Matters related to the determination, revision, or abolition of basic policy on human rights 2. Matters related to raising human rights awareness among Group companies and implementing human rights due diligence 3. Matters related to important personnel policies whose impact may potentially extend to Group companies 4. Other human rights and personnel policy-related matters deemed serious by the committee chair
BCP Countermeasures Headquarters Times held: 1	Aimed at ensuring business continuity in critical situations such as disasters, terrorism, or systems failure, this body executes the operation and maintenance of business continuity plans (BCP) in normal times as well as gives instructions on and support to restoration systems, and prioritizes restoration orders when BCP is in effect.
Disaster Prevention and Control Headquarters Times held: 1	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 Times held: 1	This body deliberates and determines items necessary for guidance for subsidiaries and affiliates, legal compliance and the improvement of other internal systems with respect to security export controls, specified export declaration systems, and the management of customs clearance operations.

Effectiveness of Board of Directors

Evaluation on the effectiveness of the Board of Directors

Analysis and Evaluation Results concerning the Effectiveness of Board of Directors

NGK's Board of Directors conducts a survey of directors and Audit & Supervisory Board members at the close of each fiscal year on the effectiveness of Board of Directors meetings. The Board entrusts analysis and evaluation of the responses to an external organization, which reports the results to the Board of Directors. NGK continually strives to improve effectiveness through such means as consideringthe importance and necessity of each issue identified and reinforcing efforts in Board of Directors meetings during the next fiscal year.

1. Policy on Initiatives and Main Initiatives for FY2023, Based on the Effectiveness Evaluation Covering FY2022

(1) Board of Directors policy on initiatives

- The following items should be monitored and regularly reported to the Board of Directors in order to achieve the NGK Group Vision

  ・Status of the business portfolio revision
  ・Progress of the New Value 1000 (aiming for sales of 100 billion yen from new commercialized products by 2030)
  ・Progress of various committee activities and company-wide projects
  ・Progress of human resources strategy
  ・Status of company-wide risk management
  [Primary Initiatives]
  We have also established multiple reporting periods for each of the annual agenda items above. Above all, in FY2023, NGK established a company-wide Risk Management Committee as a supervisory committee under the direct control of the President. It deliberates on the formulation of policies on risk management, establishment of systems, and monitoring of the status of execution, and reports to the Board of Directors.

- Work to deepen discussion related to business strategy
  [Primary Initiatives]
  Continuing from FY2022, the energy storage business strategy was discussed intensively at the expansion strategy meeting, which was held twice and also attended by outside officers.

- Enhance opportunities for dialogue between senior management and outside officers
  [Primary Initiatives]
  Conferences between senior management and outside officers were held once a month.
  In addition, senior management attended hearings convened by Audit & Supervisory Board members and outside directors, and reported on the general state of the business.

- Emphasize dialogue with shareholders and investors through IR activities
  [Primary Initiatives]
  The committee regularly reported on the status of SR activities and IR activities.
  Moreover, the committee published NGK financial results and shared the Q&A session at the Financial Results Briefing with attendees from the Board of Directors.

(2) Policy on initiatives for the Nomination and Compensation Advisory Committee

- Strive to further share the state of committee discussions with the Board of Directors
  [Primary Initiatives]
  The state and content of committee discussions were carefully shared with the Board of Directors using committee materials.

- Strive to further enhance provision of information to the Nomination and Compensation Advisory Committee
  [Primary Initiatives]
  More detailed data about the personal history, skills, and expected roles of new directorial candidates was provided by internal directors who are members of the committee, and by the committee secretariat.

2-1. Methods of Effectiveness Evaluation for FY2023

(1) A survey comprising a total of 30 questions, 6 questions evaluating the initiatives for FY2023, and two free-esponse entries was conducted on all directors (9 members) and all Audit & Supervisory Board members (4 members) at the beginning of April 2024, and the analysis and evaluation of the responses were entrusted to an external organization.
The survey questions are also periodically reviewed in light of changes to the current environment.

(2) In addition, as part of the effectiveness evaluation of the Board of Directors, the Nomination and Compensation Advisory Committee has conducted a questionnaire to its members (chairperson, members, and observers), and entrusted the analysis and evaluation of the responses to an external organization.

2-2. Summary of Evaluation Results for FY2023

(1) A summary of the evaluation results was reported to the Board of Directors at its meeting on June 5, 2024.

(2) Based on the results of the questionnaire, the external evaluation of the effectiveness of the Board of Directors (including the Nomination and Compensation Advisory Committee) was high overall, and stated that the Board of Directors is operating appropriately.

(3) Overall comments from external organizations are as follows.

- The NGK Board of Directors is appropriately composed of elements that form the foundation necessary as a Board of Directors, including the commitment of each member and a healthy culture. These have been maintained as strengths based on the results of the past few years.

- The policies for initiatives in FY2023 were drawn up based on the results of the effectiveness evaluation for the previous fiscal year. This has been appropriately reflected in the operation of the Board of Directors and Nomination and Compensation Advisory Committee this fiscal year, and has plainly helped to enhance their effectiveness.

- On the other hand, to further improve effectiveness, the Board of Directors has an awareness of issues related to its discussion of NGK's long-term directions and strategies, including optimization of its business portfolio; monitoring of management resources including human and intellectual capital; succession planning and development of senior management; and understanding of corporate performance, etc. In order to appropriately address these issues, it is desirable that continuous efforts will be made in terms of management, such as the sharp distinction and narrowing down of agenda items to allow for sufficient discussion of important items, deepening discussions, and devising methods of reporting.

3. Policy for Initiatives for FY2024 to Further Improve Effectiveness

Based on the results of the evaluation in FY2023 and discussions by the Board of Directors, we have formulated the following policies for initiatives for FY2024.

We will strive to strengthen the effectiveness of the Board of Directors and the Nomination and Compensation Advisory Committee through continuous efforts.

(1) Policies for initiatives of the Board of Directors

- To realize the NGK Group Vision, the following items shall continue to be regularly reported to and monitored by the Board of Directors.

  ・Status of business portfolio revision
  ・Progress of the New Value 1000 (aiming for sales of 100 billion yen from new commercialized products by 2030)
  ・Progress of various committee activities and company-wide projects
  ・Progress of human resources strategy
  ・Status of company-wide risk management
  ・IR and SR activities

- Identify issues that should be given priority for discussion, and deepen discussion of long-term management plans and business strategies (including group companies)
- Continue to enhance opportunities for dialogue between senior management and outside officers, while deepening discussions on succession planning and senior management development
- Work to further enhance the sharing of information with outside officers

(2) Policies for initiatives of the Nomination and Compensation Advisory Committee

- Continue working to further share the status of discussions from the committee to the Board of Directors
- Continue working to enhance information provided to the committee on compensation and nomination

Training Policies for Officers

Directors and Audit & Supervisory Board members have been tasked with the responsibility of exercising the due care of a good manager. NGK therefore has established a training policy of providing the following types of opportunities to sharpen skills and knowledge so that they can fully execute their duties as experts in various kinds of management or as supervisors of business execution.

1. For internal officers: Training on the Companies Act, the Financial Instruments and Exchange Act, competition laws, and other aspects of corporate governance and compliance
2. For outside officers: Mainly providing separate explanations from the department in charge concerning items on the agenda of the Board of Directors and regularly providing information on the business environment and issues as well as opportunities for exchanging opinions

The results for FY2023 are as follows.

1. Training on the Companies Act, competition laws, etc. by invited lecturers (2 times in total)
2. Outside officer visits to factories (1 time in total, NGK CERAMIC DEVICE CO., LTD.'s Tajimi Plant)
   Explanations before meetings of the Board of Directors and business explanations (13 times in total)
   Interviews with executive departments by Audit & Supervisory Board members and outside directors (13 times in total)

Nomination and Compensation for Directors and Audit & Supervisory Board Members

Matters Related to Nomination, Appointment and Dismissal

Policy on Nomination, Appointment, and Dismissal

The NGK Group is mainly engaged in the business of manufacturing materials such as ceramics and related products for supply to a wide range of areas, including overseas. The executive management, including representative directors, directors with special titles, directors in charge of business execution, and corporate officers is appointed without regard to gender, age, nationality, or race. They are required to make management decisions and other decisions based on their detailed knowledge of business in each NGK Group business area, specialized knowledge of manufacturing technology and R&D, and knowledge of finance, legal affairs, labor, and other areas. Full-time Audit & Supervisory Board members must also perform audit responsibilities based on professional expertise in finance and other areas, and knowledge gained from individual business experience. For these reasons, we focus on two kinds of expertise when nominating candidates for the positions of director and full-time Audit & Supervisory Board member. One is practical experience and leadership in manufacturing technology, R&D, sales, planning, overseas business, and other business areas. The other is expertise in finance, legal affairs, labor, information and telecommunications, and other subjects. For outside directors and outside Audit & Supervisory Board members, we nominate candidates from among a pool of human resources who possess professional expertise in legal affairs, corporate finance, or other areas, or discernment into international affairs, social and economic trends, trends in technology, and corporate management.
When selecting candidates for the positions of representative director and director with a special title, we focus on candidates who possess insight into NGK Group issues and the ability to formulate corrective measures, and who possess the leadership to express the vision of the NGK Group and drive the organization. When a member of executive management has committed a serious violation of local/national laws and regulations, the Articles of Incorporation, and other NGK Group rules, or has engaged in acts that seriously affect business execution, NGK will dismiss that individual upon receiving a recommendation that dismissal is appropriate from the Nomination and Compensation Advisory Committee and obtaining approval by resolution of the Board of Directors.
The Nomination and Compensation Advisory Committee, which has independent directors as a majority of its members, deliberates on this policy and reports its conclusions to the Board of Directors.

Procedures for Nomination, Appointment, and Dismissal

When nominating candidates for the positions of director and Audit & Supervisory Board member, all representative directors discuss each candidate and obtain consent from the Audit & Supervisory Board for Audit & Supervisory Board member candidates. In addition to this, NGK strives to ensure fairness, transparency, and timeliness in the process of nomination, appointment, and dismissal. This is accomplished through deliberation on the nomination of each candidate for director and Audit &

Supervisory Board member, and appointment and dismissal of representative directors and directors with special titles by the Nomination and Compensation Advisory Committee, which has independent outside directors as a majority of its members. The committee then reports its detailed conclusions to the Board of Directors. After the Board of Directors has sufficiently considered the conclusions of the committee, the Board elects candidates for the positions of director and Audit & Supervisory Board member, and approves this as an agenda item (resolution) for the General Meeting of Shareholders. After directors are elected by the General Meeting of Shareholders, the Board of Directors appoints representative directors and directors with special titles, based on the report by the Nomination and Compensation Advisory Committee.

Conclusion of Limited Liability Contract

At the 140th Ordinary General Meeting of Shareholders held on June 29, 2006, NGK amended its Articles of Incorporation to allow outside directors and Outside Audit & Supervisory Board members to enter into limited liability contracts so as to more fully carry out their expected roles.
The following provides an overview of the contents of the limited liability contract that NGK has concluded with all outside directors and outside Audit & Supervisory Board members in accordance with our Articles of Incorporation.

(Overview of Limited Liability Contract for Outside Directors and Outside Audit & Supervisory Board Members)
Concerning the liability as set forth in Article 423, paragraph 1 of the Companies Act, upon entering into this contract, outside directors and Outside Audit & Supervisory Board members must bear only the minimum liability stipulated by Article 425, Paragraph 1 of the Companies Act, provided that they have performed their duties in good faith and without gross negligence.
Even after entering into this contract, outside directors and Outside Audit & Supervisory Board members shall carry out their duties objectively and from a neutral standpoint.

State of D&O Liability Insurance

NGK has entered into a D&O liability insurance agreement for officers and other personnel. The details are as follows. The Board of Directors will reach a resolution on conclusion of the current contract on June 26, 2024.

- Scope of Persons Insured
  All NGK directors, Audit & Supervisory Board members, and executive officers
- Summary of Insurance Policy Contents
  This policy provides compensation for damages and dispute expenses incurred by the insured person due to claims for damages that result from actions (including omissions) performed by the insured person in connection with their duties as an officer of NGK. However, we have taken measures to ensure the actions taken by officers and other personnel in the service of their duties are appropriate. Thus it does not provide compensation for damages caused by the illegal acquisition of personal profits or benefits, criminal actions, or actions taken with the knowledge that they are illegal. All insurance premiums are borne by NGK.

Criteria for Determining Independence of Outside Officers

Outside Directors

In addition to the requirements for an outside director under the Companies Act and for an independent director specified by the Tokyo Stock Exchange, NGK may not designate a person who falls under any of the following items as an outside director with independence (hereinafter referred to as the "Independent Outside Director"). Even if a person falls under one or more of these items, NGK may make an exception and deem a person suitable for serving as an Independent Outside Director of NGK in light of his or her character, knowledge, and other attributes. However, the person must still meet the requirements of the Companies Act and Tokyo Stock Exchange and the Company must provide an external explanation of why such person is suitable to serve as an Independent Outside Director of NGK.
In these standards for determining independence, a business executive refers to an executive director, executive officer, corporate officer or other employee, and the NGK Group refers to NGK and its subsidiaries or affiliates.

1. A major shareholder who holds 10% or more of current voting rights in NGK, or who was a business executive of the corporation if the major shareholder is a corporation during the past three fiscal years, including the most recent fiscal year.

2. A current business executive of a business partner of the Company which has engaged in transactions with the NGK Group totaling 2% or more of consolidated net sales for either party in any of the last three fiscal years, including the most recent fiscal year.

3. A person who was a business executive in a corporation that is a financial institution or other major creditor which is absolutely essential in financing the NGK Group and for which no alternatives exist, during the past three fiscal years, including the most recent fiscal year.

4. A current director or officer of an organization that has received donations or grants totaling 10 million yen/year or 30% of total average annual expenses of the organization, whichever is greater, from the NGK Group in any of the past three fiscal years, including the most recent fiscal year.

5. A certified public accountant (CPA) or tax accountant, or a current employee of an accounting firm or tax accounting firm who served as an accounting auditor or accounting advisor of the NGK Group during the past three years, including the most recent fiscal year.

6. An attorney, certified public accountant, tax accountant, or other consultant who does not correspond to any of the individuals mentioned above in 5, who received 10 million yen/year or more in cash and other assets in addition to officer compensation from NGK Group during the past three years, including the most recent fiscal year, or who does not correspond to any of the individuals mentioned above in 5 and is a current employee, etc. of a law firm, accounting firm, tax accounting firm, consulting firm, or other organization that provides expert advice, and that organization has received payments from the NGK Group totaling 2% or more of total consolidated net sales in any of the past three fiscal years, including the most recent fiscal year.

7. A person who was a business executive in a company in which NGK is currently a major shareholder, during the past three fiscal years, including the most recent fiscal year.

8. A spouse or relative within the second degree of kinship of a person mentioned above in 1 through 7.

Outside Audit & Supervisory Board Members

In order to ensure that outside Audit & Supervisory Board members are impartial and that there is no conflict of interest with our general shareholders, NGK makes comprehensive decisions based on the Securities Listing Regulations of the Tokyo Stock Exchange.

Reasons for Individual Appointments

Outside Directors

Name	Reasons for appointment
Emiko Hamada	Ms. Emiko Hamada has made remarkable achievements such as leading the invention and the world's first commercialization of the CD-R (recordable CD) while working for Taiyo Yuden Co., Ltd. Since then, she has been engaged in research activities mainly through industry-academia-government collaborations as Professor at Nagoya Institute of Technology and Visiting Professor at Nagoya University. The Company expects her to oversee the management of the Company from an independent, objective standpoint based mainly on the perspective of research, development, and product commercialization, by utilizing the insights she has developed through her career. In addition, she has been appropriately fulfilling her duties as an Outside Director of the Company by giving her opinion in terms of ways to proceed with product development and new business and also on intellectual property strategies, as well as offering suggestions to the Company's business operation and overseeing the management of the Company, therefore, NGK has elected her as an Outside Director.
Hiroshi Sakuma	Mr. Hiroshi Sakuma has extensive knowledge of energy fields including carbon neutrality, as well as experience leading large organizations, through his work in important positions at Mitsubishi Corporation such as Division COO of New Energy & Power Generation Div. and subsequently Executive Vice President, Group CEO of Global Environmental & Infrastructure Business Group, as well as Member of the Management Board and Chief Cooperation & International Officer of N.V. Eneco*. The Company expects him to oversee the management of the Company as an Outside Director and a management specialist from an independent, objective standpoint, by utilizing those insights and experience. Therefore, NGK has elected him as an Outside Director. * A comprehensive energy company that engages in business in Europe and that was acquired by Mitsubishi Corporation and Chubu Electric Power Co., Inc. through Diamond Chubu Europe B.V., which was jointly established by them.

Name	Reasons for appointment
Noriko Kawakami	Ms. Noriko Kawakami has long engaged in product development in the power electronics field at Tokyo Shibaura Electric Co., Ltd. (currently Toshiba Corporation) and Toshiba Mitsubishi-Electric Industrial Systems Corporation (currently TMEIC Corporation) and possesses extensive knowledge and ample work experience in the energy and digital fields, such as leading the development and commercialization of large-capacity power converters applied to power grids and infrastructure facilities that use renewable energy and so forth. She was awarded the title of fellow from the IEEE* for her contributions to the development and commercialization of this technology. The Company expects her to offer suggestions to the Company's business operation from a practical perspective and oversee the management of the Company from an independent, objective standpoint as an Outside Director, by utilizing those insights and experience. Therefore, NGK has elected her as an Outside Director. * The Institute of Electrical and Electronics Engineers, Inc. (IEEE) headquartered in the U.S., the IEEE is the world's leading association for electrical and electronic engineering technologies. It has over 400,000 members in more than 190 countries around the world.
Kengo Miyamoto	Having long engaged in legal practice domestically and internationally as an attorney-at-law, Mr. Kengo Miyamoto possesses a wealth of work experience and specialized knowledge, including providing a wide range of advice to a number of Japanese and international companies in various fields such as manufacturing, service, transportation, and IT. The Company expects him to oversee the management of the Company as an Outside Director from an independent, objective standpoint based mainly on the perspective of compliance, by utilizing those insights and experience. Therefore, NGK has elected him as an Outside Director.

Outside Audit & Supervisory Board Members

Name	Reasons for appointment
Masayoshi Sakaguchi	Mr. Sakaguchi has a wealth of experience in the administrative sector and a proven track record in managing large organizations. He was chief of the Osaka Prefectural Police Headquarters, chief of the Commissioner-General's Secretariat (National Police Agency), and commissioner-general of the National Police Agency. We have determined he can contribute to improving NGK's corporate value such as by making use of this experience to express his opinions on the impact of the international situation on business activities, and strengthening our risk management structure as an NGK Outside Audit & Supervisory Board member from the viewpoint of the legality of business and risk management. We have therefore elected him to the position of outside Audit & Supervisory Board member. Mr. Sakaguchi has no personal, financial, or important business relationship with, nor other vested interest in, NGK. He has served as executive advisor to

Name	Reasons for appointment
Masayoshi Sakaguchi	Nippon Life Insurance Company, which is both an NGK shareholder and a source of financing for NGK. However, at the end of FY2023, Nippon Life Insurance Company's holdings did not exceed more than 0.96% of total NGK shares, and, with regard to the financing received, NGK has business transactions with numerous financial institutions, and the nature of the financing secured from Nippon Life Insurance Company is not such that NGK is any way beholden to it. Therefore, we deem the shareholding and financial borrowing relationship between NGK and Nippon Life Insurance Company to be one which would not impact NGK's management decision-making. Moreover, the total amount of NGK payments to Nippon Life of management fees for corporate pension plans is less than 0.1% of consolidated operating expenses and, thus, does not create a conflict of interest with our general shareholders. Concurrent with his work with NGK, Mr. Sakaguchi serves in a variety of roles, including as president of the Japan Automobile Federation. However, no personal, financial, or important business relationship, nor other vested interest, exits between NGK and the organizations with which he currently works.
Takashi Kimura	Mr. Kimura possesses many years of experience in managing companies through his service as a Managing Executive Officer at The Bank of Tokyo-Mitsubishi UFJ, Ltd. (now, MUFG Bank, Ltd.), as President and Representative Director of Mitsubishi Research Institute DCS Co., Ltd. In addition to his experience and knowledge in finance and corporate governance gained throughout his career, Mr. Kimura also served as a full-time Audit & Supervisory Board member of MITSUBISHI GAS CHEMICAL COMPANY, INC. and possesses extensive experience and expertise as an auditor of listed companies. We consider him capable of utilizing his broad experience and wide-ranging insight to provide opinions on financial management, governance systems (including those of subsidiaries), and the nature of decision-making to contribute to enhancing the corporate value of NGK, and have therefore elected him as an outside Audit & Supervisory Board member. Mr. Kimura has no personal, financial, or important business relationship with, nor other vested interest in, NGK. Mr. Kimura comes from the Bank of Tokyo-Mitsubishi UFJ (now MUFG Bank), which is both an NGK shareholder and a source of financing for NGK. However, at the end of FY2023, MUFG Bank's holdings did not exceed more than 2.30% of total NGK shares, and, with regard to the financing received, NGK has business transactions with numerous financial institutions, and the nature of the financing secured from MUFG Bank is not such that NGK is any way beholden to it. Moreover, given that 14 years have already passed since he left the Bank of Tokyo-Mitsubishi UFJ (now MUFG Bank), we do not believe his decisions are affected by the wishes of MUFG Bank in any way that would constitute a conflict of interest with our general shareholders. Also, no personal, financial, or important business relationship, nor other vested interest, exits between NGK and the organizations with which he is or has been involved.

NGK has submitted written notification to the Tokyo Stock Exchange and Nagoya Stock Exchange of the appointment as independent officers of the above six individuals.

CEO Succession Planning

The revised NGK Group Chief Executive Officer Succession Plan was approved by resolution of the Board of Directors in April 2023. This succession plan establishes the required qualities, development policies, selection procedures, and other actions for developing chief executive officer successors. Based on this, the president provides the Nomination and Compensation Advisory Committee with a progress report on the plan each year, and the committee reviews the appropriateness of the plan.

Matters Related to Compensation

Policy for Determining Compensation

Basic Concept

The compensation system for NGK directors and others has been established for the purpose of contributing to the Group's sustainable growth and the enhancement of its medium-to-long-term corporate value by practicing the NGK Group Philosophy and realizing the NGK Group Vision. We reassess whether the level and composition of compensation is appropriate in light of those objectives and revise it as appropriate. The Company also strives to ensure transparency and fairness in governance of compensation.

Policies on Determining the Details of Compensation for Directors and Others

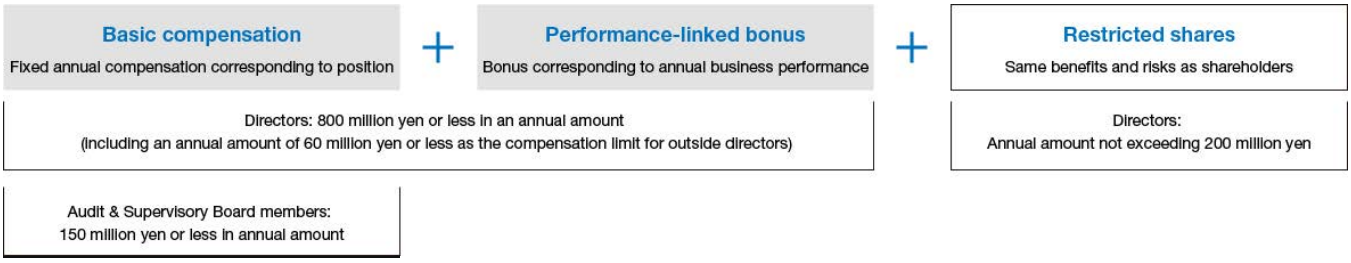
General Meeting of Shareholders Resolutions on Compensation

General Meeting of Shareholders' resolutions on officer compensation and the details of compensation

Persons Eligible for Payment	Date and Details of the Resolution	Number of Persons Eligible for Payment at the Time of Resolution	Reference: Type of Compensation
Directors	June 28, 2007 Amount of compensation etc.: 800 million yen or less in an annual amount	14 (including 2 outside directors)	Basic compensation and performance-linked bonuses (excluding outside directors)
	June 29, 2017 Of the above, the amount of compensation limit for outside directors was revised from 30 million yen or less to 60 million yen or less in annual amount	13 (including 3 outside directors	

Persons Eligible for Payment	Date and Details of the Resolution	Number of Persons Eligible for Payment at the Time of Resolution	Reference: Type of Compensation
Directors (excluding outside directors)	June 27, 2022 Total amount of monetary claims to be paid as compensation for the grant of restricted shares: 200 million yen or less in annual amount	6	Restricted share compensation
Audit & Supervisory Board Members	June 26, 2023 Amount of compensation etc.: 150 million yen or less in annual amount	4	Basic compensation

Composition of compensation for Directors, Audit & Supervisory Board Members and Executive Officers



Composition Ratio of Director Compensation for FY2023

Persons Eligible for Payment	Basic compensation	Performance-linked bonus	Stock-related compensation
Representative Director	55%	30%	15%
Directors (Excluding Outside Directors)	64%	22%	14%
Outside Directors	100%	-	-

Items Related to Performance-linked Compensation, Etc

Details of Performance Indicators and Reasons for their Selection Based on Calculation of Performance-linked Compensation Amount

NGK pays its directors (excluding outside directors) and executive officers performance-linked bonuses as performance-linked compensation. These are calculated using the following indicators.
We have adopted the following consolidated performance figures as short-term indicators that emphasize achieving performance goals and annual growth, while taking into account the perspective of capital efficiency.

- Changes in net sales, operating income, or net income for the current fiscal year compared to the last
- Achievement rate for return on invested capital (ROIC)* against targets set at the beginning of (or during) the period

  * Using NGK ROIC (calculated based on operating income, accounts receivable, inventories, and fixed assets).

Moreover, in consideration for medium-term growth, we use the degree to which we attain our targets for the following material issues in each fiscal year as indicators for our achievement of the NGK Group Vision and from the perspective of Environmental, Social, and Governance.

- Percent of Operating Income Attained for Medium- to long-term Performance Targets in the NGK Group Vision
- Rate of Achievement of Keep Up 30* for New Products / New Business Creation

  * A target of 30% or higher net sales from new products (as defined by NGK)

- Rate of achievement of CO_2 emissions reduction targets in a single year

Method for Calculating Performance-linked Compensation

We follow the method below to determine the amount of performance-linked bonus paid to each individual.
(a) Set a base bonus amount calculated for each position.
(b) Apportion the base bonus amount among each performance indicator. Allocate a higher percentage to items that take a medium-to- long-term perspective than to those that take a short-term perspective. Then include the representative director's evaluation of the individual performance of each other director and executive officer in the allocation items.
(c) Evaluate each allocation item over a scale of -100% to +100%, and calculate the appraised value for each item.
(d) Sum up these amounts to calculate the amount of performance-linked bonus

As a result, the actual performance-linked bonus paid will vary from -100% to +100% of the base bonus amount.

Percent Allocated per Item for Performance-linked Bonuses and Performance Appraisal Indicators

Item	Percent Allocated	Evaluation Coefficient Variance Ratio	Performance Appraisal Indicators (Calculated in practice by replacing each indicator with the variance ratio and evaluating it.)
Short-term Indicators	40%	-100% to +100%	Net sales, operating income, and net income for current period – Initial target values and actual values for current period
		-100% to +100%	Return on invested capital (NGK ROIC) – Initial target values and actual values for current period
Medium- to long-term Indicators	60%	-100% to +100%	NGK Group Vision medium- to long-term performance targets (operating income) – FY2025 target values for each past year and actual values for current year
		-100% to +100%	Material Issue Achievement Rate (Keep Up 30* for New Products / New Business Creation CO_2 emissions reduction targets in a single year, etc)

Achievement concerning performance indicators used to calculate performance-linked compensation

The following results are based on the primary performance indicators used to calculate performance-linked bonuses for FY2023.

- Consolidated financial figures for preceding period (FY2022): Net sales of 559.2 billion yen, operating income of 66.7 billion yen, and net income of 55.0 billion yen
- Target values for beginning of term (FY2023): 9.3% return on invested capital
- Consolidated financial figures for current period (FY2023): Net sales of 578.9 billion yen, operating income of 66.3 billion yen, net income of 40.5 billion yen, and 9.8% return on invested capital
- Operating income for medium- to long-term performance targets in NGK Group Vision: 66.3 billion yen (actual)

- Keep Up 30* for New Products / New Business Creation: Net sales ratio from new products (as defined by NGK) not attained
- Efforts to reduce CO_2 emissions: CO_2 emissions reduction effect: Achieved FY2023 CO_2 emissions (consolidated) target of 560,000 tons through efforts such as reducing CO_2 emissions intensity* (through energy conservation)

* CO_2 emissions unit: Volume of CO_2 emissions per unit produced

Non-monetary Compensation etc.

Details of Non-monetary Compensation

NGK grants restricted share compensation to directors (excluding outside directors) and executive officers (excluding executive officers who are overseas residents on a non-temporary basis) in order to increase their sensitivity to stock price, to further share with shareholders the benefits and risks associated with stock price fluctuations, and to motivate them to improve corporate value over the medium to long-term. Since stock price fluctuations are directly related to its value, the amount of restricted shares is not fixed, but the number of shares granted is fixed in accordance with the position. An overview of the restricted share compensation we granted in FY2024 is as below.

Overview of Restricted Share Compensation	
Class and number of shares to be issued	NGK common stock: 126,500 shares
Issue price	2,082 yen per share
Aggregate issue amount	263,373,000 yen
Persons eligible for the allotment of the shares and the number thereof, as well as the number of shares to be allotted	NGK directors (excluding outside directors): 6 people, 45,500 shares executive officers who do not concurrently serve as NGK directors: 24 people, 81,000 shares (excluding executive officers who are overseas residents on a non-temporary basis)

* Period of the transfer restriction stipulated in the restricted share allotment agreement (hereinafter "the Allotment Agreement"): The allottees must not transfer, establish as security interests or otherwise dispose of NGK's ordinary shares allotted to them according to the Allotment Agreement from the date on which they receive their allotment according to the Allotment Agreement to the point in time directly after retiring from the position determined in advance by NGK's Board of Directors from among the positions of NGK's officers and employees.

Claw back clause

NGK has a provision to acquire all of the accumulated allotted stocks without compensation in the event that the allottee of the restricted shares violates laws and regulations during the period of the transfer restriction, or in the event that certain other conditions stipulated in the allotment agreement are met.

Stock holding guideline for Directors and Executive Officers

In order to foster a sense of shared value between directors and executive officers and shareholders, and to contribute to the sustainable growth of the NGK Group and the enhancement of its corporate value over the medium to long-term, NGK has established guidelines for holding its own stock, etc.*1 and in principle, within three years of assuming office, directors and executive officers shall endeavor to hold company stock, etc. equivalent to the following values.

* 1 Includes stock compensation-type stock options that have not yet reached the exercise commencement date.

Persons Eligible	
Directors (Chairman and President)	150% or more of basic compensation (annual amount)
Directors*2 and Executive Officers*3	100% or more of basic compensation (annual amount)

* 2 Excluding Chairman, President, and outside directors

* 3 Excluding executive officers who are overseas residents on a non-temporary basis

Amount of Compensation for Directors and Audit & Supervisory Board Members

Compensation for Directors and Auditor & Supervisory Board Members (FY2023)

Director category	Total compensation (million yen)	Total compensation by type (million yen)			Applicable officers (people)
		Fixed Compensation	Performance-linked compensation	Restricted share compensation	
Directors (excluding Outside Directors)	526	301	150	74	6
Outside Directors	42	42	-	-	3

Director category	Total compensation (million yen)	Total compensation by type (million yen)			Applicable officers (people)
		Fixed Compensation	Performance-linked compensation	Restricted share compensation	
Audit & Supervisory Board Members (excluding Outside Audit & Supervisory Board Members)	71	71	-	-	3
Outside Audit & Supervisory Board Member	28	28	-	-	2

Notes:The total amount of compensation for Audit & Supervisory Board members (excluding outside Audit & Supervisory Board members), the total amount of compensation by type, and the number of applicable officers noted above include one Audit & Supervisory Board members who resigned from their position on June 26, 2023 and the amount of compensation they received.

Officers Receiving Total Compensation of ¥100 Million or More (FY2023)

Name	Officers category	Company category	Total compensation by type (million yen)			Total compensation (million yen)
			Fixed compensation	Performance-linked compensation	Restricted share compensation	
Taku Oshima	Director	Submitting company	67	37	17	122
Shigeru Kobayashi	Director	Submitting company	67	37	17	122

Average Employee Compensation and President Compensation

At NGK, the compensation for the President was 14.3 times that of the average employee compensation in FY2023.

(FY2023)

President compensation: 122,000,000 yen
Average employee compensation: 8,553,909 yen

Compliance Promotion Structure

NGK Group Corporate Business Principles

The NGK Group Corporate Business Principles has been compiled as a guideline for everyone who works within the NGK Group so that they are aware of what is expected of them in terms of work-related compliance in order to ensure honesty and reliability in our business activities. It has been translated into 11 languages, including English and French. All NGK Group employees will act with high ethical standards according to these principles as they fulfill their social responsibilities throughout the entire supply chain to build societal trust in NGK.
At the beginning of FY2022, the ESG Management Department delivered an awareness-raising message to the entire NGK Group about strictly adhering to the Corporate Business Principles. We also began using the company intranet to show popup notifications about the Corporate Business Principles on the computers of all employees at NGK and Group companies in Japan.
The NGK Group Code of Conduct revised in 2019 divided into "the NGK Group Corporate Business Principles" that stipulate the basic approach for our corporate activities, and "the NGK Group Code of Conduct" that summarizes the points that officers and employees must comply with. These were put into practice in 2023.

NGK Group Corporate Business Principles and Code of Conduct ›

Scope of Application

The NGK Group Corporate Business Principles applies to all employees and suppliers of the NGK Group. Employees are provided with the NGK Group Corporate Business Principles and guidebook on putting the Corporate Business Principles into practice upon joining the NGK Group. They also receive job grade-specific training and other instruction.

Non-Compliance Incident Reports

In FY2023, there were no incidents of serious legal non-compliance in the NGK Group.

Examples of Legal Violations

Governance Data Collection

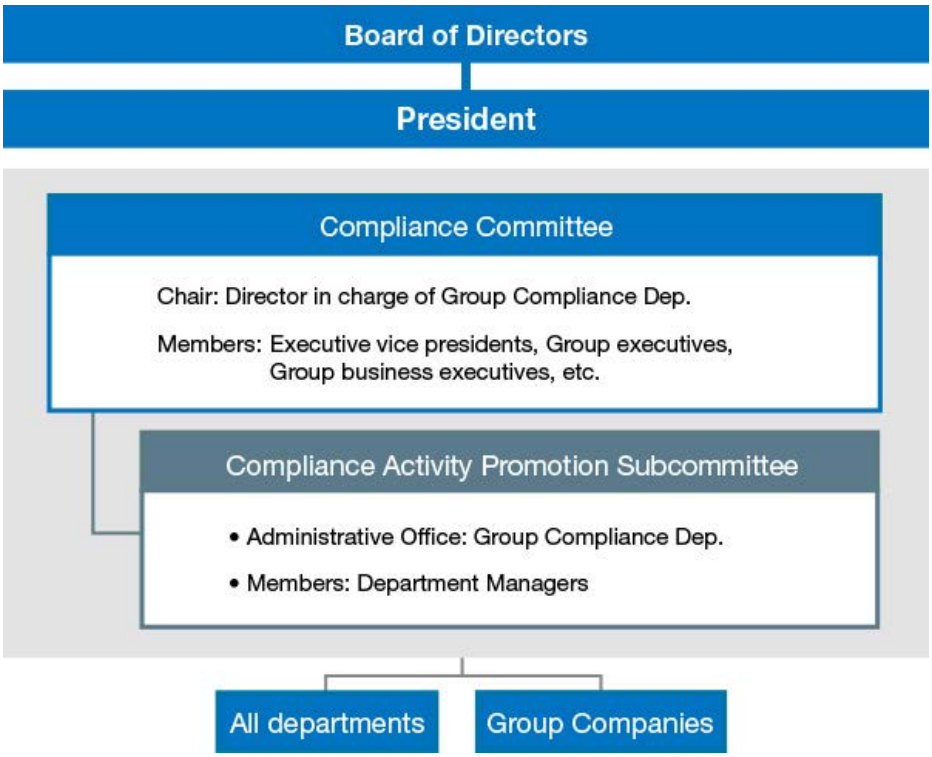
NGK Group Basic Guidelines for Compliance Activities

The idea of what constitutes good compliance activities continues to evolve worldwide amidst a changing social and legal landscape, and the NGK Group requires mechanisms for objectively evaluating and verifying, as well as continually improving, its own activities in light of international norms. It is also important that compliance-related activities as a whole be improved qualitatively by ensuring that compliance-related ideals and values be standardized not only in areas of legal compliance but also in areas such as safety, the environment, and quality. Thus, in April 2021, it was in this context that the new NGK Group Basic Guidelines for Compliance Activities were created in order to codify in writing the NGK Group's basic stance on, and approach to, compliance activities. Based on our NGK Group Basic Guidelines for Compliance Activities, related business groups and departments are working together to qualitatively improve compliance activities with regard to safety, the environment, quality, exports, human rights, competition laws, and the like, so that they are more effective.

Compliance Promotion Structure

The NGK Group has established a Compliance Committee, which reports directly to the president. A Compliance Activity Promotion Subcommittee was established as part of the Compliance Committee to ensure proper execution of the Committee's work. The Compliance Committee regularly reports the matters it handles to the Board of Directors, and the Board of Directors supervises the activities of the Compliance Committee.

Compliance Promotion Structure Chart



Since FY2021, we have asked Group companies to select compliance administrators and compliance officers and have begun discussions with them to establish the foundations of an effective and efficient compliance structure for the entire NGK Group. The Group Compliance Department is also leading the introduction of innovative training formats in each company using hybrid communication that includes group discussions as well as online and in-person meetings in an effort to enhance learning through interactive education. We have participants fill out questionnaires after they complete the training to gauge their level of understanding and consider improvements for the next round of training. The goal of pursuing these efforts is to make sure that each NGK Group company will be able to independently formulate, implement, confirm effectiveness, and improve compliance measures in the future.

Mission of the Group Compliance Department

- Embed the idea of "compliance first" within the corporate culture across the NGK Group
- Ensure thorough compliance throughout the NGK Group by promoting compliance activities, which meet international norms and establish mechanisms for ongoing improvement
- As for Group companies outside Japan, promote compliance for our globalized operations by obtaining the most up-to-date information regarding applicable laws and social demands in each region

Mission Achievement-Focused Initiatives of FY2023

- At the beginning of the year, the president shares a message about compliance being our top priority (continued from previous years)
- During Compliance Strengthening Month in October, we shared the President's message and put up educational posters
- Promoting awareness of NGK Basic Guidelines for Compliance Activities and providing examples of its utilization in department work
- Risk-based compliance education (NGK and Group companies in and outside Japan) with a focus on effectiveness
- Adapting to global laws and regulations (competition laws, anti-bribery laws, etc.)
- Operation and maintenance of a whistleblowing system (In Japan: Check operational status of revised Whistleblower Protection Act, Outside Japan: Adapt to EU Directive on the Protection of Whistleblowers, and review each company's regulations)

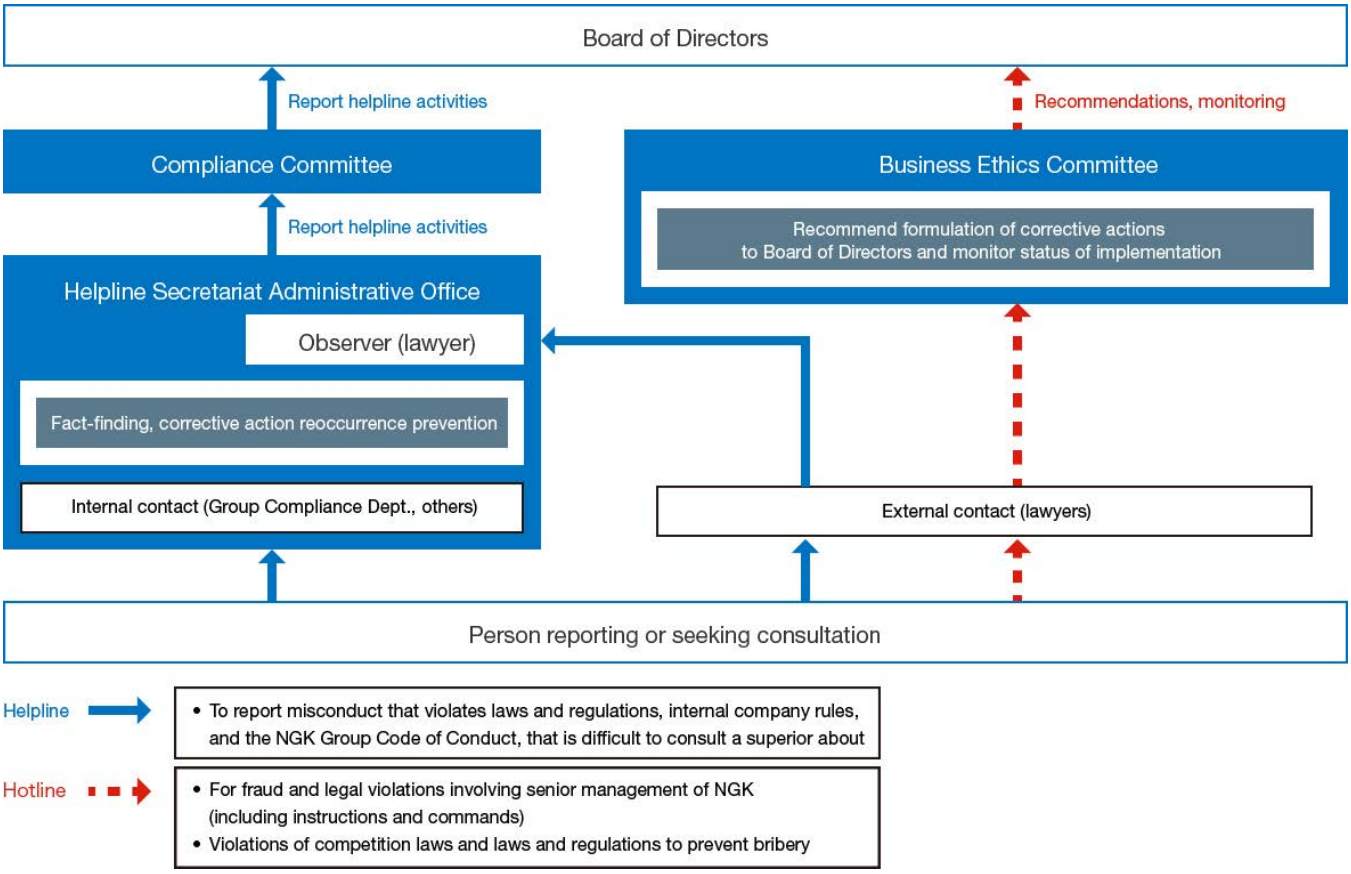
Interaction with Suppliers

We ask all of our suppliers to comply with the NGK Group Supplier Code of Conduct. This code of conduct stipulates specific initiatives related to ethics and compliance, including comprehensive measures for anti-corruption, intellectual property protection, and fair trading. We ask all our suppliers to consent to compliance with this code once a year. We also ask suppliers to consent to compliance with this code when starting new transactions.

Whistleblowing System

Our whistleblowing system (helplines and hotlines) can be used by everyone who works at NGK and every Group company location. This includes officers, employees, employees dispatched on external assignments, advisors, contract employees, temporary employees based on a temporary employment agreement, and resident employees accompanying a service contract. We can handle consultations and reports via telephone or email in either Japanese or English. In principle, it is recommended to consult and report with his or her identity, but it is also possible to seek consultation anonymously through an external contact. Our company rules guarantee protection of those seeking advice or reporting issues, and the NGK Group Code of Conduct prohibits retaliation against those who make reports. Upon receiving a report or consultation, we will consider whether it merits an investigation in a fair, impartial, and sincere manner, and promptly notify the person who sought advice or reported the issue of how it will be handled from here out. If the investigation reveals misconduct or a violation of the law, NGK will impose penalties on those involved in accordance with our employment regulations.

Organization of Whistleblowing System



Helpline

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 Corporate Business Principles and to facilitate quick resolution when issues occur. Each Group company outside Japan has its own helpline. Managers in-charge of internal whistleblowing system hotline and consultation work undergo annual training conducted by external lawyers about how to handle consultations, investigate the facts, matters to bear in mind concerning corrective action, and specific case studies about reports of harassment and other incidents. In FY2023, this training included examples of fraudulent conduct, in addition to power harassment.

Number of Helpline Consultation Cases

Governance Data Collection

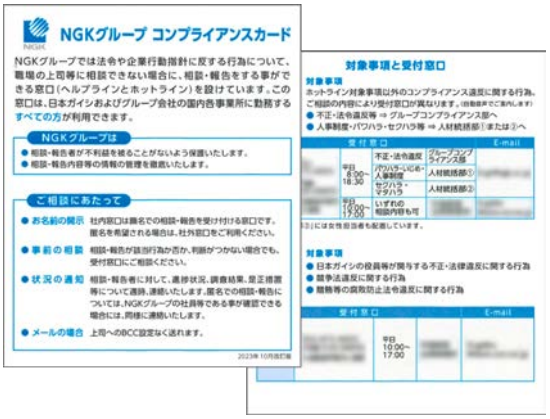
In FY2023, there were a total of 35 reports and consultations. There were 16 concerning harassment, 7 concerning the personnel system and work regulations, 3 concerning rules and regulations, and 9 concerning other issues. Each case was handled carefully following the process from receipt, investigation, judgment, and corrective measures in consultation with third-party outside lawyers, and none of the details of the whistleblowing had an impact on company operations. We continue to periodically evaluate and improve the effectiveness of the NGK Group Corporate Business Principles and our compliance measures based on the content of these reports and consultations.

Hotline

We have established a hotline as a whistleblowing system for responding to fraud and legal infractions committed by senior management of NGK, and all violations related to competition laws and anti-corruption laws. Outside lawyers manage the hotline and the Business Ethics Committee, which consists mainly of outside directors, handles issues. The Committee reports these issues to the Board of Directors and takes corrective steps.
We have set up hotlines for all Group companies outside Japan where employees can report violations of competition laws and anti-corruption laws at overseas Group companies. We continue to set up hotlines to respond to fraud and legal infractions committed by senior management, while taking the circumstances in each country into consideration.

Compliance Card

To ensure thorough awareness of the whistleblowing system, we created a Compliance Card that employees could keep with them at all times. In FY2023, we updated the contents of this card, and distributed it to all employees at NGK and all Group companies in Japan. Also, in line with the revisions to the Whistleblower Protection Act, in FY2021 we revised our company regulations to allow former employees to contact the helpline/hotline for one year after leaving the company.


NGKグループ コンプライアンスカード

NGKグループでは法令や企業行動指針に反する行為について、職場の上司等に相談できない場合に、相談・報告をする事ができる窓口（ヘルプラインとホットライン）を設けています。この窓口は、日本ガイシおよびグループ会社の国内各事業所に勤務するすべての方が利用できます。

NGKグループは
- 相談・報告者が不利益を被ることがないよう保護いたします。
- 相談・報告内容等の情報の管理を徹底いたします。

ご相談にあたって
- お名前の開示　社内窓口は匿名での相談・報告を受け付ける窓口です。匿名を希望される場合は、社外窓口をご利用ください。
- 事前の相談　相談・報告が該当行為か否か、判断がつかない場合でも、受付窓口にご相談ください。
- 状況の通知　相談・報告者に対して、進捗状況、調査結果、是正措置等について連絡、連絡いたします。匿名での相談・報告については、NGKグループの社員等である事が確認できる場合には、同様に連絡いたします。
- メールの場合　上司へのBCC設定なく送れます。

2023年10月改訂版

対象事項と受付窓口

対象事項

ホットライン対象事項以外のコンプライアンス違反に関する行為。ご相談の内容により受付窓口が異なります。（自動的にご案内します）
- 不正・法令違反等 ⇒ グループコンプライアンス部へ
- 人事制度・パワハラ・セクハラ等 ⇒ 人材統括部①（または②へ）

受付窓口			E-mail
平日 8:00～18:30	不正・法令違反	グループコンプライアンス部	
	パワハラ・ハラスメント・人事制度	人材統括部①	
	セクハラ・マタハラ	人材統括部②	
平日 10:00～17:00	いずれの相談内容も可		

※②には女性担当者も配置しています。

対象事項
- 日本ガイシの役員等が関与する不正・法律違反に関する行為
- 競争法違反に関する行為
- 贈賄等の腐敗防止法令違反に関する行為

受付窓口			E-mail
	平日 10:00～17:00		

Corruption Prevention Structure

Assessing Risk and Dealing With Corruption

The NGK Group carries out risk management for major compliance risks, including corruption, by considering them from a management-level perspective. We then sort those deemed important risks into the categories of business environment, strategy, and internal factors, and continually review them. The Compliance Committee and other committees and responsible departments take a leading role in working to avoid and prevent risks in each business by conducting risk analysis through surveys and the evaluation of special risks in internal control processes.

Compliance Education

Compliance Education for Employees

Compliance training and awareness among corporate officers and employees is driven primarily by the Group Compliance Department and the Legal Department. In addition to career training and training for employees to be posted overseas, we provide Laws and Compliance Seminars to explain laws and regulations and to introduce case studies. Since FY2018, we have included quality compliance and contract observance as part of our career education courses.

Compliance Education Conducted in FY2023 (Overall)

Name	Target	Content	Instruction Format	Number of sessions
Career education	New hires	Compliance, competition laws, anti-bribery regulations for dealing with foreign officials	Seminar by in-house instructor	1
	Promoted or career-change employees	Compliance, Corporate Business Principles / Code of Conduct (Honest Business Activities)	Video presentation	2
	Mid-career hires	Compliance, competition laws, anti-bribery regulations for dealing with foreign officials, Corporate Business Principles / Code of Conduct (Honest Business Activities)	Seminar by in-house instructor / Video presentation	1
	Newly appointed supervisors	Compliance, competition laws, anti-bribery regulations for dealing with foreign officials, quality compliance, contract observance, security export control, Corporate Business Principles / Code of Conduct (Honest Business Activities)	Seminar by in-house instructor / Video presentation	1
	Newly appointed managers	Compliance, competition laws, anti-bribery regulations for dealing with foreign officials, quality compliance, contract observance, security export control	Seminar by in-house instructor	1
	Managers promoted to second grade	Compliance, quality compliance	Seminar by in-house instructor	1
Training for employees scheduled for postings abroad (global training)	Employees scheduled for postings abroad	Competition laws, anti-bribery regulations for dealing with foreign officials, security export control	Video presentation	1
Compliance education	Managers and sales staff of Group companies outside Japan	Compliance, competition laws, anti-bribery regulations for dealing with foreign officials	Lecture provided by lawyer and e-learning	19 (24sites)

Name	Target	Content	Instruction Format	Number of sessions
Compliance education	General employees of NGK and Group companies in Japan	Compliance, harassment prevention, whistleblowing system	Video presentation	1
	Sales staff of NGK and Group companies in and outside Japan	Anti-bribery regulations for dealing with foreign officials	Lawyer-led seminar	1
	Executive officers	Competition laws	Lawyer-led seminar	1
	Newly appointed executive officers	Companies Act and competition laws	Lawyer-led seminar	1
	Managers and sales staff of NGK and Group companies in Japan	Competition laws	Lawyer-led seminar / video presentation	1
	People responsible for Competition Law Practice, etc.	Oral training on competition law	Seminar by the Compliance Department	2
Laws and Compliance Seminars	Managers and other targets depending on content	May Export controls on semiconductor manufacturing equipment, etc. for Japan and the USA	Seminar by in-house instructor / video presentation	1
		July Training about anti-bribery regulations	Seminar by outside lawyer /video presentation	1

Name	Target	Content	Instruction Format	Number of sessions
Laws and Compliance Seminars	Managers and other targets depending on content	September Construction Business Act	Seminar by in-house instructor / video presentation	1
		November Helplines and hotlines that protect both you and the company	Seminar by outside lawyer / video presentation	1
		January Latest trends in insider trading	Seminar by in-house instructor / video presentation	1
		March Contract observance	Seminar by in-house instructor / video presentation	1

Competition Law Education Conducted in FY2023

Name	Target	Content	Number of sessions
Training for newly appointed directors	Newly appointed directors and executive officers	Live seminar by outside lawyer	1
Competition law compliance lectures	All directors, managers, and sales staff of NGK and its Group companies in Japan	Streamed video of live seminar by outside lawyer	2
Compliance training for Group companies outside Japan	Managers and sales staff of Group companies outside Japan	Lawyer-led live seminar; e-learning; seminar conducted by an in-house instructor	19 (24sites)
Training on competition laws by internal lecturer	Targets depend on content	Department-requested on-site training	2

Anti-Bribery Training Conducted in FY2023

Name	Target	Content	Number of sessions
Training for sales staff	Sales staff in Japan and some Heads of Group companies outside Japan	Anti-bribery regulations for dealing with foreign officials	1
Legal Compliance Seminars	Managers of NGK	Anti-bribery regulations for dealing with foreign officials	1
Compliance education	Managers and sales staff of Group companies outside Japan	Live seminar by outside lawyer and online seminar; seminar conducted by an in-house instructor; conducted using paper-based resources	19 (24sites)

Conducting Anti-Bribery Training

In addition to having in-house lecturers provide job grade-specific training to NGK employees, in FY2019 we began conducting training for sales department employees that incorporates interactive lectures by outside lawyers and group discussion of case studies relevant to participants' work. We also arrange lawyer-led seminars and other training at all Group companies. In addition, starting in FY2023, we have expanded the scope of training from just the sales department to include other departments that are exploring new businesses.

Other Dissemination Activities

Compliance Newsletter

Once a month we publish a Compliance Newsletter to the company intranet that uses four-frame cartoons to allow readers to learn about topics relevant to them in an easy-to-understand manner. We use examples to explain in detail what readers should learn.

コンプライアンス便り Vol.94

今回のテーマ：海外に製品を送るときは

製品や技術情報などを海外へ送るときには、社内のルールに従って、規制対象かどうかを確認しましょう。

あるメーカーの開発部門に勤務するAさん。ある日、海外の支店から、製品サンプルを送ってほしいという依頼があった。急いでいるらしく、すぐにでも発送しなければならないらしい。しかし、Aさんは海外に荷物を送ったことがなかったので、先輩のBさんにどうすればいいのかを相談した。

Bさんは、海外にものを送るときは、輸出前のチェックをしなければならないと話した。Aさんは、「一般向けの製品ですし、そもそもサンプルだからチェックは必要ないのでは」と答えた。Bさんは、「一般向けの製品でもサンプルでも、事前のチェックが必要だよ」と話し、海外に製品や技術資料などを送るときには、安全保障上の問題がないか、事前チェックが必要だから、チェック担当部門に確認を依頼しなければならないと説明した。

先進国が保有する高度な貨物や技術が、大量破壊兵器等の開発や製造等に関与している懸念国やテロリスト等の懸念組織に渡ることを未然に防ぐ取り組みを「安全保障貿易管理」といいます。今回のように、仕事で海外に製品などを送る場合は、それが規制対象に該当するかどうかをチェックしなければなりません。今回は「製品を海外に送るときはどのようなチェックを行わなければならないか」について学びましょう。

この事例はフィクションです。

Note: Provided by “Compro Custom” compliance training tools service

Themes Covered in the Compliance Newsletter in FY2023

April	Are you employing the corporate philosophy in your work?
May	How do we create an open workplace?
June	What are pregnancy discrimination and paternity harassment (parental discrimination)?
July	Don't use smartphones while walking

August	When work gets too busy, reduce or spread out the load
September	What can happen if you throw away old documents without looking at them
October	Compliance Strengthening Month
November	The importance of participating in disaster prevention drills
December	Human Rights Week
January	What to do if you witness someone sharing confidential information with someone outside the department
February	Creating an atmosphere in which people can express their opinions without hesitation
March	When sending products overseas

Compliance Strengthening Month

Since FY2017, we have declared October to be Compliance Strengthening Month, and take actions such as sharing the President's message, putting up educational posters, and making sure employees know about the internal whistleblowing hotline. In FY2023, we distributed a video message from the President to NGK and our Group companies both inside and outside of Japan.

Compliance Award

In FY2021, we launched the Compliance Activities Award System. This system recognizes particularly outstanding activities, among the initiatives pursued by each department and Group company inside and outside of Japan, that demonstrate qualities such as autonomy and originality. We also publicize them within the NGK Group as good examples. In FY2023, we recognized the NGK Manufacturing Division's Komaki Plant for their Organizational Revitalization through Safety Symbol Zone Initiatives. We also presented certificates of commendation from the chairman of the Compliance Committee, and held a round-table discussion with members of the award-winning divisions.

Initiatives to Ensure Thorough Compliance

Compliance with Competition Laws

Observing Competition Laws on an International Level

In addition to mandating compliance with competition laws in the NGK Group Corporate Business Principles, we have established the Competition Laws Compliance Rules, which have been set forth to comply with international standards. These standards are strictly enforced by the NGK Group. We have established these policies and procedures in order to eradicate unfair business practices and maintain fair and equitable business relationships with our business partners.
We also provide education and training aimed at ensuring widespread awareness and thorough compliance with the Competition Laws Compliance Rules and the Competition Laws Compliance Handbook. The Competition Laws Compliance Activity website we established posts practical manuals to guide compliance with competition laws. We have revised the Competition Laws Compliance Handbook to accommodate changes in social conditions, etc., and reviewed our internal rules in FY2023, before publishing the 4th edition.

Strengthening Our Compliance System in Relation to Competition Laws

Year conducted	Regulation development	Creation of internal systems	Education
FY1997	- Formulated guidebook and briefing document for the Anti-Monopoly Act	- Required each headquarters to submit a Compliance Status Report on the Anti-Monopoly Act	- Lectures on the Anti-Monopoly Act by outside instructors (lawyers) (subsequently held annually)
FY2011	- Formulated Competition Laws Compliance Rules		
FY2012	- Created and distributed the Competition Laws Compliance Handbook - Created and distributed an Appendix to the Competition Laws Compliance Handbook	- Established an independent committee	- In-house training led by Legal Department staff - Lectures by local lawyers held at Group companies outside Japan

Year conducted	Regulation development	Creation of internal systems	Education
FY2013			- Conducted briefing on the Competition Laws Compliance Handbook - Invited U.S. lawyers to lecture on competition laws
FY2014	- Revised Competition Laws Compliance Rules - Launched operation of a database for advanced notifications and participation reports pertaining to meetings - Launched operation of an e-mail monitoring system - Revised Competition Laws Compliance Rules at North American sales subsidiaries	- Introduced company-wide centralized supervision and reporting structures led by the Board of Directors (independent of the President) - Appointed company-wide competition laws supervisory managers - Enhanced the helpline	- Conducted study meetings for newly appointed directors on competition laws and the Companies Act by Japanese and U.S. lawyers (subsequently held annually) - Conducted study meetings on competition laws at Group companies outside Japan (corresponding to laws and regulations in each country)
FY2015	- Competition Laws 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 - Revised the Competition Laws Compliance Handbook	- The Competition Laws Compliance Program was resolved by the Board of Directors - Established the Global Compliance Office - Contracted Pricewaterhouse Coopers to conduct an unbiased expert review of the implementation status of the NGK Group's Competition Laws Compliance Program and assess the overall oversight and reporting structures in place for NGK Group companies	- Conducted study meetings on competition laws for new employees - Distributed a DVD on competition laws to Group companies in Japan - Upgraded training on compliance with competition laws provided in and outside Japan

Year conducted	Regulation development	Creation of internal systems	Education
FY2016	- The U.S. version and Chinese version of the Competition Laws Compliance Handbook were created and distributed to Group companies in the U.S. and China	- Progress status of the Competition Laws Compliance Program was quarterly reported to the Business Ethics Committee, which is composed mainly of outside directors. The program was promoted based on suggestions received from the Committee. - Retained PwC Advisory to assess the status of competition law compliance	- Expanded seminars led by lawyers in Asia - Held seminars on the Companies Act and competition laws for newly appointed executive officers - Prepared online-based training aimed at realizing broader training programs (implemented in FY2017 in Japan)
FY2017	- Created an operating manual for database used to document competition law compliance	- Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws at beginning of term	- Online seminars provided to 861 employees in Japan
FY2018	- Clarified items that should be reported to the hotline when there were violations or fear of violation of competition laws, and revised Competition Laws Compliance Rules - Created a working manual for compliance with competition laws	- Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws at beginning of term*	- Held seminars on the Companies Act and competition laws for newly appointed directors and executive officers* - Held competition law compliance lectures. All executives and managers attended.*

Year conducted	Regulation development	Creation of internal systems	Education
FY2019	- Revised Competition Laws Compliance Rules at NGK Electronics Devices, Inc. to strengthen that subsidiary's competition laws compliance system	- Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws at beginning of term*	- Held seminars on the Companies Act and competition laws for newly appointed executive officers* - Held competition law compliance lectures. All key personnel and those designated by competition law compliance managers attended.* - Information session provided regarding the Competition Laws Compliance Handbook's key points (on competitor information when creating email and documentation)
FY2020	- Established the Competition Laws Compliance Activities Portal Site	- Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws*	- Held seminars on the Companies Act and competition laws for newly appointed directors and executive officers* - Held competition laws compliance lectures attended by executives, all key personnel, and those designated by competition law compliance managers*

Year conducted	Regulation development	Creation of internal systems	Education
FY2021	– Revised the Competition Laws Compliance Handbook		– Conducted legacy training for all NGK directors and general managers about past violations of competition laws at NGK
FY2022		– Added the Corporate NV Creation as the headquarters responsible for things such as implementing a Competition Laws Compliance Program	– Conducted legacy training for managers in sales positions at NGK about past violations of competition laws at NGK
FY2023	– Revised the Competition Laws Compliance Handbook		– Compliance with domestic competition laws – Conducted comprehensive training about violations of competition laws at NGK for those responsible and in charge of operations.

* These items continue every year

Third-Party Review of Competition Laws Compliance Program

Since FY2015, NGK has contracted PwC Risk Advisory LLC (PwC) as a compliance specialist to review the operation of our Competition Laws Compliance Program based on the Competition Law Compliance Rules, as well as NGK Group's unified supervision and reporting system for domestic and international group companies, from an objective point of view. Since FY2017, PwC has been conducting interviews with executives of our business groups in order to assess their attitude toward compliance with competition laws, and to further raise their awareness of such compliance efforts. The results of these reviews are used to operate and improve our Competition Laws Compliance Program.

Instances of Anticompetitive Behavior

In FY2023, no instances of anticompetitive behavior were observed within the NGK Group.

Instances of Anticompetitive Behavior

Governance Data Collection

Export/Import Transaction Management

Strict Adherence to Laws and Regulations Relating to Export/Import Management

As part of its full compliance efforts, NGK is engaged in strictly observing and enforcing laws and regulations related to export and import control. Based on the NGK Group Corporate Business Principles, we stipulate abidance with laws and regulations related to secure export control, and we carry out export control and employee training in accordance with 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 has screened exports to determine whether export licenses are required and has recorded screening results in a security export control database. However, since October 2017, we have moved to a security export control system (TTP) and are performing management via this new system. Furthermore, export management with respect to the export of certain products is conducted under the Japanese government's AEO (authorized economic operator) Program.
We have used an export/import cargo management ledger to fulfill our obligations to track and record export and import; however, since our switch to a security export control system (TTP), we have been using the system's shipment ledger to track and record exports. We continue to use an import cargo control ledger for imports. Each department performs voluntary inspections of export and import under the AEO Program at the start of the fiscal year.
In addition, we use NACCS data (Nippon Automated Cargo and Port Consolidated System) to verify the completeness of import cargo management ledgers and shipment ledgers. We have achieved nearly 100% completeness for both export and import.

Familiarization with the Export/Import Handbook

NGK also makes efforts toward thorough compliance with the Export/Import Handbook, in use since FY2021 and revised in FY2022, that 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 content of the handbook through study meetings related to export/import management conducted in each department. Study meetings on the AEO Program and export/import management are held one or more times per year targeting relevant staff in departments responsible for export and import activities. In FY2023 these meetings were held not only in-person, but via web conferencing and newsletters. The meetings were held a total of 26 times, with 535 employees in attendance.

Anti-Harassment Measures

NGK conducts annual position-based training as part of our measures to combat harassment. In FY2022, we also began training on prevention of workplace bullying, which targeted executives at Group companies in Japan, and employed a group discussion format utilizing specific case studies. In FY2023, 141 employees from four companies and five locations attended. We also added sexual harassment to the training content for general employees, and conducted training in the form of lectures. 637 employees from four companies and four locations attended. In addition, we distributed learning materials throughout the NGK Group for use as part of self-study and harassment training by each department, based on the results of the compliance awareness survey conducted in FY2023. These were viewed more than 3,000 times in the first three months of distribution. The Compliance Department also visits each department and Group company to actively conduct training using these learning materials. We continue working to prevent harassment before it occurs and further improve the workplace environment by providing more effective training content.

Number of Position-based Anti-Harassment Training Sessions

Number of Participants in Position-based Anti-Harassment Training

Governance Data Collection

Compliance Awareness Survey

In FY2023, as part of our efforts to strengthen the NGK Group compliance structure, we conducted our fourth Compliance Awareness Survey for employees working at NGK and Group companies in Japan. Therein, we identified risks that have become apparent, and asked respondents what they thought about their impacts, etc. Each department and company is now formulating initiatives and working to reduce risks based on the results.

Corruption Prevention Structure

Basic Approach

As laid out in the NGK Group Corporate Business Principles, the NGK Group has declared our commitment to working to bring about a sustainable society, respect human rights, conduct business activities that are fair, transparent, and sound, and strive to comprehensively prevent corruption as called for in the NGK Group Code of Conduct. Corruption is contrary to the NGK Group Corporate Business Principles and Code of Conduct, and cannot be tolerated. It not only impedes the realization of a sustainable society, but leads to human rights violations. We comply with applicable laws and regulations, prohibit direct or indirect involvement in corruption, and strive to prevent corruption in all of our business activities. We established the NGK Group Anti-Corruption Policy to earn the trust of stakeholders and bring about a sustainable society.

Examples of Corruption

In FY2023, there were no confirmed incidents of corruption in the NGK Group.

Examples of Corruption

Governance Data Collection

Bribery/Conflicts of Interest/Money Laundering/Insider Trading

NGK Group executives and employees are prohibited from engaging or participating in corrupt practices such as bribery, embezzlement, conflicts of interest, money laundering, insider trading, obstruction of justice, or the abuse of their own or another person's authority or position for the benefit of an individual or organization.

Bribery

The NGK Group prohibits bribery, which is the giving of money, gifts, entertainment, etc., to another person for the purpose of obtaining an improper advantage. To prevent such actions, we will maintain sound relationships with stakeholders, including public officials and government officials, in the countries and regions in which we operate. And we will not accept these kinds of benefits (bribes) from others. We will only provide gifts and entertainment when there is a justifiable business reason for doing so, and within the scope of socially accepted norms. We will not provide gifts or entertainment on a habitual basis. Moreover, we will properly manage company assets such as cash, equipment, software, and vehicles, and use them only for legitimate business purposes. We will not use them for ourselves or other people.

Conflict of Interest

The NGK Group prohibits conflicts of interest in which NGK's interests are sacrificed to obtain personal gain, or to provide benefits to third parties such as relatives and friends. This can include selecting someone with whom you have a personal interest as a business partner, engaging in a business which competes with the company business, or the like. See the link below for more information on our approach to conflicts of interest.

Approach to Conflicts of Interest ›

Money Laundering

NGK Group executives and employees are prohibited from engaging in "money laundering" to conceal or disguise funds obtained through illegal activities such as tax evasion and fraudulent settlement of accounts.

Insider Trading

NGK Group executives and employees are prohibited from engaging in "insider trading," which entails buying and selling securities such as stocks based on important undisclosed information about a company or its business partners. One of our initiatives is to distribute educational videos to NGK Group members every year covering the latest trends, etc. concerning insider training.

Anti-Corruption Initiatives

In FY2015, NGK formulated Anti-Bribery Regulations in order to ensure compliance with anti-bribery laws as well as ethical standards for business conduct. These prohibit all acts of bribery (entertainment, gifts of money and goods), whether they are committed directly or indirectly. These regulations also stipulate the actions that NGK should take to reduce bribery risks. As part of these efforts, when using new representatives, etc., we perform due diligence by checking for the existence of items stipulated by our suspicious signs list, and sign a contract that includes a clause about understanding and complying with laws and regulations related to preventing corruption. In addition, we check the state of transactions with new and existing representatives, etc. twice a year, and conduct a bribery risk assessment. Our Auditing Department has also been reviewing overseas remittances and entertainment expenses since FY2017. Moreover, we receive reports of violation or possible violation of relevant laws or regulations and the Anti-Bribery Regulations via our hotline, etc. If we receive such a report, we investigate and examine the facts with the advice of external experts (lawyers, etc.), and determine the appropriate response. We maintain appropriate handling and independence, by having the Business Ethics Committee, which is composed primarily of outside directors, be involved in the process of investigation and review.
Plus, every other year, NGK checks for violations or signs of violations in the workplace with a compliance awareness survey of all Group employees in Japan, and conducts level-specific training during which in-house instructors explain specific corrupt practices.

Responsible Political Involvement

Donations to Political Parties and Political Fund Raising Organizations

The NGK Group strives to maintain transparent, sound, normal relationships with political and administrative bodies. We make political contributions and donations in accordance with the laws and regulations of each country, and do not engage in actions that may lead to suspicion or distrust from society.
When making political donations, we follow the procedures stipulated by our internal regulations, while fully complying with the Political Funds Control Act, the Public Offices Election Act, and other relevant laws and regulations.
We made no political donations in FY2023.

Tax Transparency

The NGK Group complies with international standards, the laws and regulations of each country and region and conducts all of our corporate activities with fairness and transparency. With respect to tax matters, we have established the NGK Group Tax Policy and will continue to maintain and improve our tax compliance.

NGK Group Tax Policy ›

Amount of Tax Paid by Country

NGK Group (Fiscal Year Ended March 31, 2023) (billions of yen)

	Amount of Tax Paid
Japan	16.26
USA	2.61
Germany	1.98
Poland	0.63
Indonesia	0.52
Mexico	0.32
Australia	0.16
Others	0.17
Total	22.62

* The above amounts are based on the "Country-by-Country Report" submitted to the tax authorities in Japan.

Risk Management

Basic Approach

The NGK Group considers uncertainties which may affect achievement of the Group Vision to be risks. We have established an approach of handling risks according to their type, which enables us to control these risks by appropriately recognizing and preventing them, and to minimize losses caused by risks that do materialize. Moreover, when risks that have a big impact on management occur, the committee tasked with handling the risk according to the Basic Rules of Crisis Management, will lead the way in collecting information and ascertaining the situation. The NGK Group will then work to minimize the negative impacts, analyze the causes, and prevent recurrence. For extremely serious risks, the vice president in charge of the Corporate Planning Office will convene a response meeting attended by the President to respond to the risk.

Approaches to Risk Management ›

Risk Management Structure

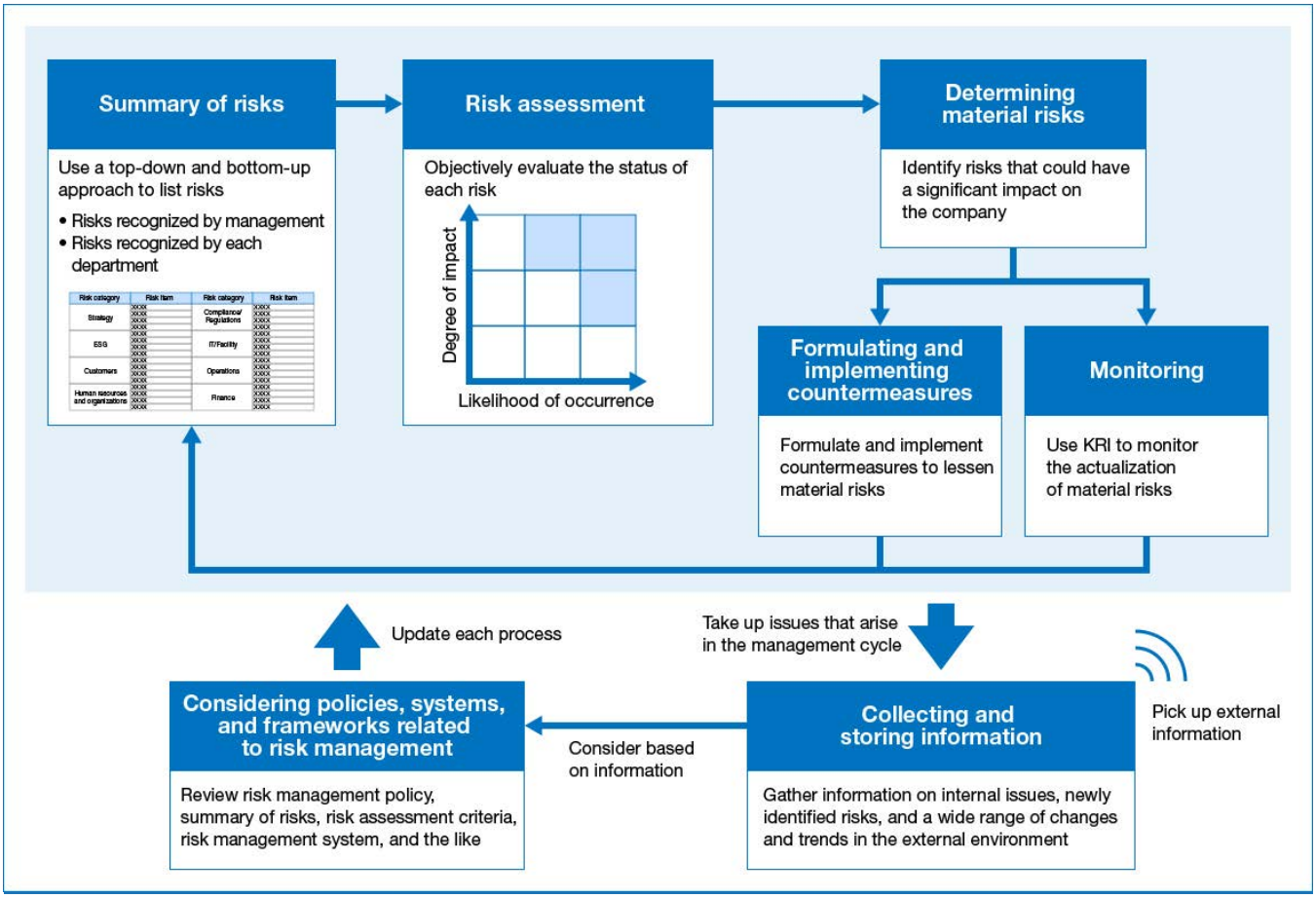
In FY2023, the NGK Group established a new Risk Management Committee chaired by the President for comprehensively handling the Group's significant risk issues in accordance with the risk management process described below. At least once a year, the Risk Management Committee reports to the Board of Directors about risk management activities. Through this, the Board of Directors is able to supervise these efforts and verify the effectiveness of the risk management structure. The risk management structure in question, is managed independently of the Audit & Supervisory Board.

Risk Management Structure

Risk Management Process

The Risk Management Committee periodically analyzes and evaluates risks then identifies and reviews the material risks that should be managed based on changes in the internal and external environment, with reference to the concepts in the COSO-ERM Framework. It has also established a risk management structure and method for formulating and implementing countermeasures against risk and monitoring the manifestation of risks via the committees and departments in charge of managing risks. The Risk Management Committee manages the risks facing the NGK Group in an interdisciplinary manner based on the concept of risk management determined by the Board of Directors, and reports its activities to the Board of Directors.
In order to address risks that have suddenly increased in importance due to abrupt changes in the internal and external environment, we make sure we are able to respond by adding them in a timely manner to the list of targets to be handled by the Risk Management Committee. After the Noto Peninsula Earthquake in FY2023, we determined that the importance of natural disaster risk had increased and added it for review by the Risk Management Committee in addition to the material risks that had already been determined through committee deliberation and approval by the Board of Directors.

Material Risk Management Cycle



Risks, Summary, Response

Risks	Summary	Response
1. Business operation risks	All operations	
	- Demonstrations, terrorism, war, infectious disease, natural disasters, and other unforeseen matters	- Construct globally distributed, alternative systems
	Environment Business	
	- Changes linked to decline in demand for internal combustion engine vehicles	- Develop and launch new and high-performance products in line with stronger exhaust regulations
	- Drop in market share due to rising competition from Chinese market	- Strengthen competitiveness via technical responsiveness that anticipates environmental regulations, and via capacity to ensure supply stability
	- Decline in demand due to downturn in business, delayed timing of regulations, or other factors	- Respond appropriately to the content and timing of environmental regulations and trends in demand
	- Drop in market share due to increased competition in kilns for lithium ion battery cathode materials and electronic components	- Carefully monitor customer trends and pursue production system innovation where appropriate to ensure quick response to changes in demand

Risks	Summary	Response
1. Business operation risks	Digital Society Business	
	- Greater than expected decline in semiconductor demand	- Make revisions to equipment capacity and personnel and production systems, etc., where appropriate based on demand information from direct customers who manufacture semiconductor manufacturing equipment
	- Drop in market share due to delayed responsiveness to customer needs	- Improve our unique product responsiveness and product supply capacity
	- Significant changes in semiconductor manufacturing process due to innovative invention	- Carefully monitor semiconductor manufacturing process trends and revise production systems where appropriate to ensure quick response to changes in demand
	- Export restrictions on semiconductors from various countries	- Carefully monitor regulatory trends, share information with related departments, and prepare necessary rules and manuals so that we can respond quickly
	- Decreased demand for final consumer goods - Decreased investment in mobile phone base stations and data centers	- Carefully monitor customer trends and review personnel and production systems where appropriate to ensure quick response to changes in demand
	- Inability to develop new technology or release products in response to customer needs	- Carefully monitor customer trends and pursue timely technological development

Risks	Summary	Response
1. Business operation risks	Energy & Industry Business	
	- Decrease in advantages of NAS batteries over competitors' products, such as lithium-ion batteries, that use innovative technologies	- Strengthen partnerships with leading overseas companies - Utilize government support measures
	- Changes in the energy policies of each country - Capital investment cutbacks by electric power companies - Adoption of polymer insulators in the Japanese market	- Carefully monitor energy policy trends in each country and revise production systems where appropriate to ensure quick response to changes in demand
2. R&D-related risks	- Inability to achieve adequate results with the input received due to increasingly complicated technological competition	- A total of 300 billion yen will be set aside for research and development expenses over the next 10 years, 80% of which will be allotted to the carbon neutrality (CN) and digital society (DS) - Set a target of 100 billion yen in sales from new products and new businesses (New Value 1000) by 2030, and promote the creation and commercialization of new products through collaboration between Corporate NV Creation, Corporate R&D, and Corporate Manufacturing Engineering - Review the distribution of research and development resources in the Development and Commercialization Committee - Establish a new Corporate NV Creation based primarily on marketing

Risks	Summary	Response
3. Personnel Risks	Securing and managing personnel	
	- If hiring and training personnel does not go as planned, we will not attain our business goals due to failure to improve business execution capabilities	- Expand mechanisms and systems to secure and develop global personnel and personnel for digital transformation - Establish an internal environment that encourages employees to take on challenges
	Support diversity and inclusion	
	- Loss of opportunities for innovation due to continued homogeneity of personnel - Decreased competitiveness in recruiting due to being seen as a company that is reluctant to promote diversity and inclusion	- Formulate various policies and implement personnel measures to ensure diversity - Hire a broad range of personnel from both new graduates and mid-career personnel
4. Legal compliance, human rights and safety, and quality-related risks	Legal compliance-related risks	
	- Decline in NGK Group's reputation due to actions in opposition to societal norms with regard to legal and regulatory compliance, respect for human rights, contract compliance, etc.	- Utilize employee training and handbook distribution to ensure employees are familiar with relevant laws and regulations and have a more compliance-focused mindset - Establishment of the NGK Group Basic Guidelines for Compliance Activities in accordance with international standards - The Business Ethics Committee, which comprises outside directors and compliance officers, watches out for serious improprieties or legal/regulatory violations - Reduce the possibility of compliance violations through a whistleblowing system

Risks	Summary	Response
4. Legal compliance, human rights and safety, and quality-related risks	Human rights and safety-related risks	
	- Human rights violations in the Group's business activities	- Formulation of the NGK Group Human Rights Policy - Issuance of statement on the UK Modern Slavery Act - Conduct various types of training aimed at improving employee understanding of human rights - Prevention and reduction of human rights violation risks through compliance with international norms related to human rights
	- Employee occupational hazards, illness, or physical and mental health problems	- In accordance with NGK Safety and Health Policy, identify serious hazard risks and use risk assessment to facilitate strengthening of preventative measures - Follow up on employees who work long hours, and conduct job grade-specific mental health education
	Quality and product safety-related risks	
	- Damage to NGK's brand reputation due to business deficiencies such as serious market complaints, breaches of contract, and lawsuits.	- Have Quality Management Department perform monitoring of each business group's quality activities, in line with NGK Quality Policy - Regarding serious issues, convene quality review meetings in order to find a solution quickly - Establishment of Four Rules for Quality Activities, and expand process activities to eliminate quality risks to the entire Group - Establish quality compliance programs in the workplace - Formulate guidelines concerning the safety of products and services, establish appropriate risk assessment methods for each business group, and expand training

Risks	Summary	Response
5. Information systems-related risks	- Negative impact on societal trust or business continuity due to shutdown of data processing, or to theft, destruction, manipulation, loss, etc., of data, following external cyber-attack or unauthorized system access, or after unexpected system failure or security issue	- Establishment of an IT security system based on the NGK Group Information Security Policy - Conduct information security training for employees - Appropriate application and management of internal information assets
6. Currency exchange, capital, and procurement-related risks	- Decreased sales and profits and deterioration of business performance due to strong yen - Risk of negative impact on business operations, performance, and financial situation of NGK Group as a result of financing difficulties stemming from serious regional financial crises and other factors	- Keep production close to local demand centers, perform financing in local currency, and optimize purchasing according to currency exchange situation - Hedge risks with forward foreign exchange contracts and other financial instruments
	- Rise in prices of certain materials and energy in each region	- Appropriately reflect risk in sale price - Reduce costs through competitive purchasing, design revisions, and other means
	- Delays in materials procurement and backlogged shipments to customers due to supply chain disruptions and lateness in responding to changing laws and regulations in each country	- Inventory control - Diversification of suppliers - Information collection and monitoring through overseas locations

Risks	Summary	Response
7. Climate change and disaster-related risks	Climate change-related risks	
	- Deterioration in business performance due to increased costs in the event that a scenario comes to pass other than that forecast by the Task Force on Climate-Related Financial Disclosures (TCFD) - Decline in reputation with stakeholders, damage to brand, and loss of business opportunities due to failure to achieve climate change response targets	- Establish scenarios which maximize the risks and opportunities brought about by the transition to carbon neutrality, as well as the physical risks and opportunities, and formulate response strategies for each - Perform a quantitative analysis of the financial impacts of the risks and opportunities identified according to the classifications of the Task Force on Climate-Related Financial Disclosures (TCFD) - Development and introduction of products and services that contribute to the realization of a carbon-neutral society - Formulate a roadmap for reaching net zero CO_2 emissions by 2050
	Large-scale disaster and infectious disease-related risks	
	- Serious damage to facilities at production bases due to events beyond expectation - Long–tem supply difficulties due to impacts on the local infrastructure where plants are located by events beyond expectation - Negative impact on manufacturing and sales due to emergence and spread of a major infectious disease	- Promote business continuity plan (BCP) for entire Group by drawing up related rules, conducting drills, etc. - Decentralize production sites for main businesses - Increase number of suppliers - Reduce susceptibility of buildings and facilities to natural disasters - Guarantee safety of employees

Legal Risk Management in Overseas Subsidiaries

The NGK Group is working on understanding better legal risk management by overseas subsidiaries to minimize risks which become global and varied due to overseas business expansion.
We ask all overseas subsidiaries to report information pertaining to the status of lawsuits, legal affairs and consultation with lawyers twice a year, and whistleblowing system usage, export controls and access to legal-related information once a year. Major issues mentioned in such reports are reported to and shared at the Compliance Committee. Consultations from overseas subsidiaries are handled by the legal department and by lawyers, if necessary, to avoid risks.

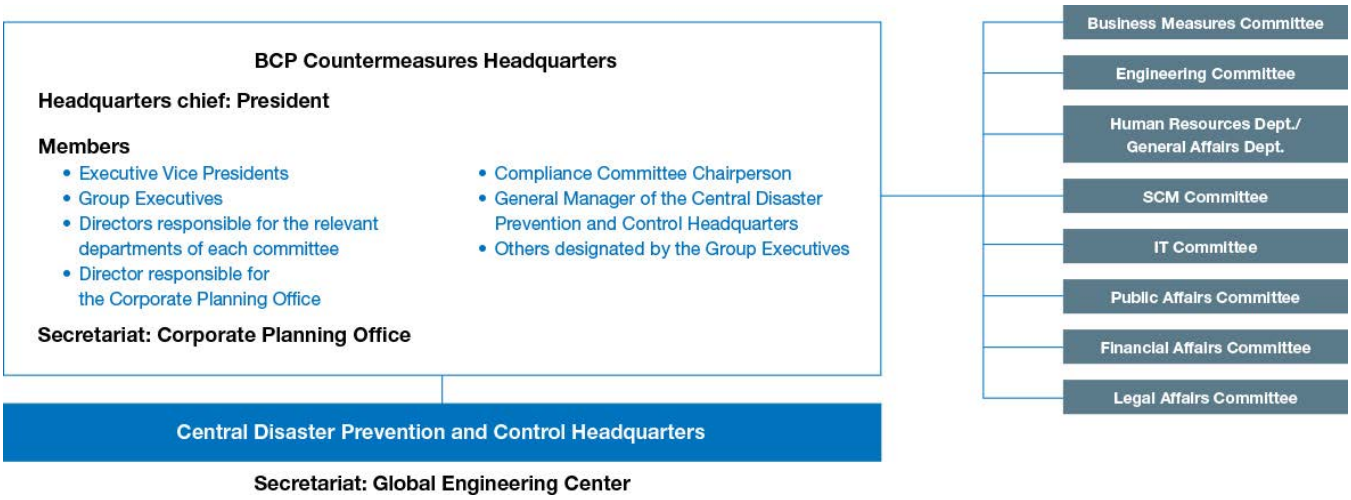
Identifying and Preventing Risks Based on Questionnaire

As part of efforts to enhance risk management practices, in FY2022 NGK and its Group companies in Japan conducted the fourth CRS (Corporate Risk Survey).
Combining the previously administered CSA (Control Self-Assessment) questionnaire and the compliance awareness survey, the CRS checks the understanding of respondents regarding the possibility of risk and its implications with the goal of grasping and preventing various potential risks arising from daily business operations. Based on the results of the survey, the relevant departments and headquarters in charge of handling risks formulate and implement measures to reduce risks.

Business Continuity Plan (BCP) Initiatives

At NGK, we have established the BCP Countermeasures Headquarters under the direction of the President as an organization to carry out operation and maintenance of our business continuity plan, with the aim of respecting human life and cooperating with the local community. It promotes our business continuity plan (BCP) throughout the entire NGK Group. Measures taken in preparation for putting our BCP into operation include the establishment of multiple manufacturing bases and procurement sources, damage mitigation measures related to buildings and equipment, and employee safety assurance. We also conduct emergency drills based on scenario plans presuming a major disaster such as a large earthquake in the Nankai Trough with the aim of enhancing our ability to cope with a crisis in the event a disaster occurs. During these drills, participants are instructed to take real action according to the plan. This helps us to identify even small issues with each process and procedure and use our findings to improve the BCP. In addition, the BCP Secretariat leads the way in working to ensure business continuity by collecting information early on and implementing countermeasures in response to procurement difficulties stemming from the spread of infectious disease or changes in the global situation.

BCP Organizational Structure



* In the event of an emergency or disaster, the Central Disaster Prevention and Control Headquarters will switch over to the Central Disaster Control Headquarters to respond to the disaster.

FY2023 Initiatives

Education	– Distribute materials concerning evacuation in the case of a Nankai Trough earthquake, and survey employees at target sites
Awareness	– Solicit ideas and hold discussions on disaster preparedness
Training	– Conduct highly effective training through both face-to-face and online training sessions
Other	– Revised the action plan based on insights gleaned from the prior fiscal year's practical BCP activities

Future Initiatives

- Improve the effectiveness of BCP by raising the level of training further (e.g., hold BCP training for operational units)
- Ongoing support for home disaster prevention initiatives (dealing with those who are unable to return home after a disaster and providing drills for returning home in an emergency, etc.) from the perspective of respect for human life, which is the top priority of BCP
- Continue to hold training and disaster preparedness events on each factory floor with the aim of improving the BCP/disaster prevention awareness of each and every employee

Information Security

Information Security Management System

Our Information Security Management System assigns the roles of each part of our organization during normal times. Concerning security incidents affecting critical systems, we will continue to align and strengthen our BCP and internal crisis management system.

Basic NGK Group Information Security Policy ›

Information Security Measures

Within the NGK Group, proper management and operation of information assets is a collaborative effort carried out by the General Affairs Department and ICT Department, in conjunction with other relevant administrative departments and in line with the Basic NGK Group Information Security Policy.
Every employee who uses a computer or other information-processing devices as part of their job is provided with our Electronic Information Security Handbook and is trained in the proper use of their devices, as well as made aware of the need to contact the General Affairs Department and ICT Department if the devices are lost, infected with a computer virus, or otherwise compromised. Also, under the rules of employment, employees are subject to disciplinary action if their improper use of information devices results in the leaking of confidential information or some other result that significantly impacts the company.
Meanwhile, personnel from NGK's ICT Department visit several Group companies each year to conduct on-site checks into the status of IT security measures and to provide guidance on their implementation. In FY2023, we conducted visits to overseas Group companies in Europe, the USA, and Asia. We also held online IT Global Meetings several times for all overseas Group companies in the regions of North and Central America, Europe and Africa, China, and Asia Pacific. Group companies in each region discussed IT security operations and conducted training on how to handle security incidents.

Formulation of the 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. Therefore, in FY2010, we formulated the NGK Group IT Security Standards with the goal of developing an IT security structure based on commonly shared Group standards and raising the bar when it comes to IT security.
We update these standards every year in response to societal changes and trends, and work to standardize the level of IT security in our Group by sharing them with each group company. In FY2023 we reviewed the sections pertaining to the handling of data when using cloud services.
Every year, each Group company drafts action plans for the enactment of countermeasures in an attempt to systematically strengthen security. Via these action plans, NGK confirms initiatives at each Group company and provides guidance as necessary.

Information Security Training

We conduct training sessions throughout the year to ensure strict adherence to information security among all employees.
We offer training for newly hired employees and newly promoted supervisors and managers to NGK employees while e-learning is offered to NGK employees and employees of some Group companies in Japan.

Training Summary

Item	Participants	Participation rate
Training for newly hired employees	168	100%
Training for newly promoted supervisors	130	100%
Training for newly promoted managers	94	100%
E-learning	7,006	85.8%

* Note: Excluding employees who were away on maternity leave, childcare leave, long-term business trips, etc.

Ensure IT Security Against Cyberattacks

As a countermeasure against cyberattacks, NGK is strengthening each category of protection, detection, response, and recovery from cyberattacks following the cybersecurity framework announced by the National Institute of Standards and Technology (NIST) of the U.S.
In FY2023, we introduced an SOC (Security Operation Center) at all Group companies which primarily enhances detection and response. Meanwhile, we carried out training for all members of our headquarters and domestic Group companies concerning email spoofing.
By getting them to recognize the threats close at hand, we hope to improve their awareness of security.

Personal Information Management

The NGK Group has established Personal Information Management Regulations in addition to maintaining privacy policies and regulations in accordance with the laws and regulations of each country regarding personal information. We take painstaking care in our protection, management, and handling of customer information.

Privacy Policy ›

Intellectual Property Management

The NGK Group positions intellectual property as an important management resource.
Through our intellectual property strategy, we are aiming to expand business and increase profitability. We work to maximize the utilization of retained intellectual property while also promoting intellectual property activities that contribute to our management strategy. We also strive to link intellectual property to creating new businesses and enhancing the competitiveness of existing business.

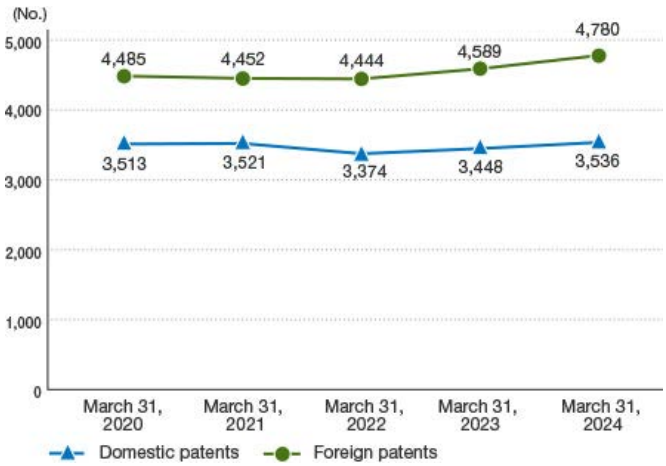
What We Aim for in 2030

The NGK Group positions intellectual property (IP) as an important management resource. Thus far, we have supported business through IP activities focused on securing global patent rights. Recent years have seen an increase in the importance of investing in and utilizing intangible assets. In addition to conventional IP protection efforts, we also recognize the need to conduct activities focused on IP utilization. This includes investing in intellectual property that is aligned with our management strategy. These activities will contribute to new business creation, help us secure a competitive advantage in the future, and contribute to the realization of the NGK Group Vision. To this end, we outline the following as what we aim for in 2030:

1) Three-pronged promotion of business strategy / development strategy / IP strategy

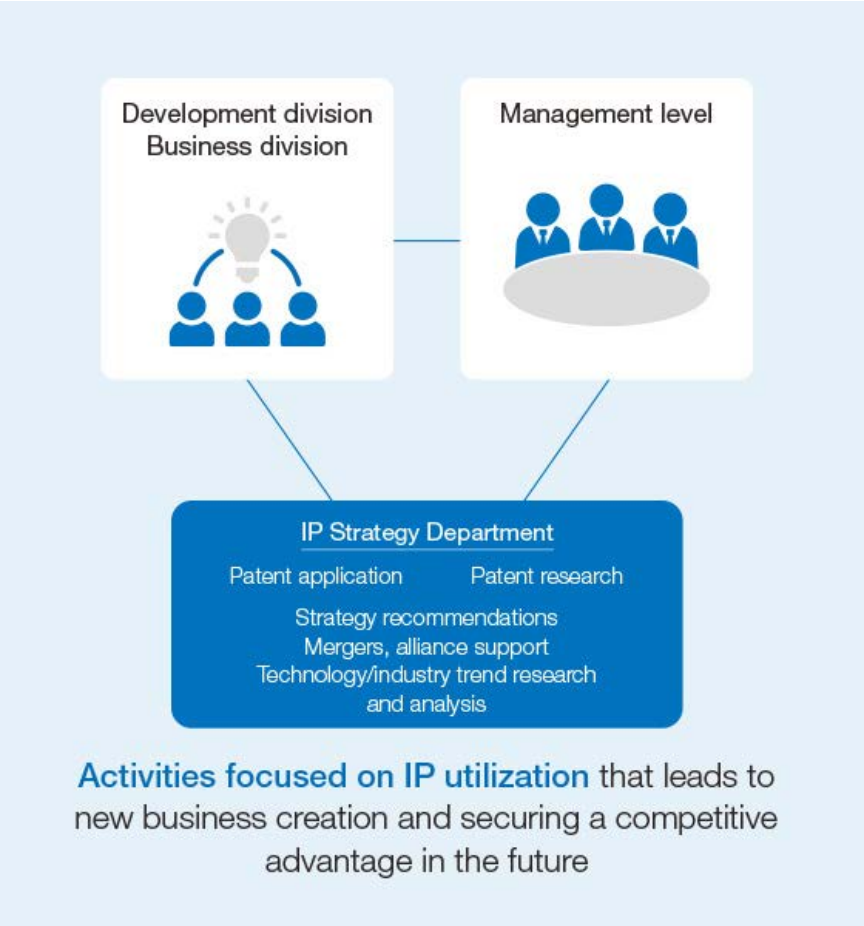
2) Utilize tools such as IP Landscape® to promote activities focused on IP utilization and initiatives aimed at supporting these activities.

Number of Patents Held

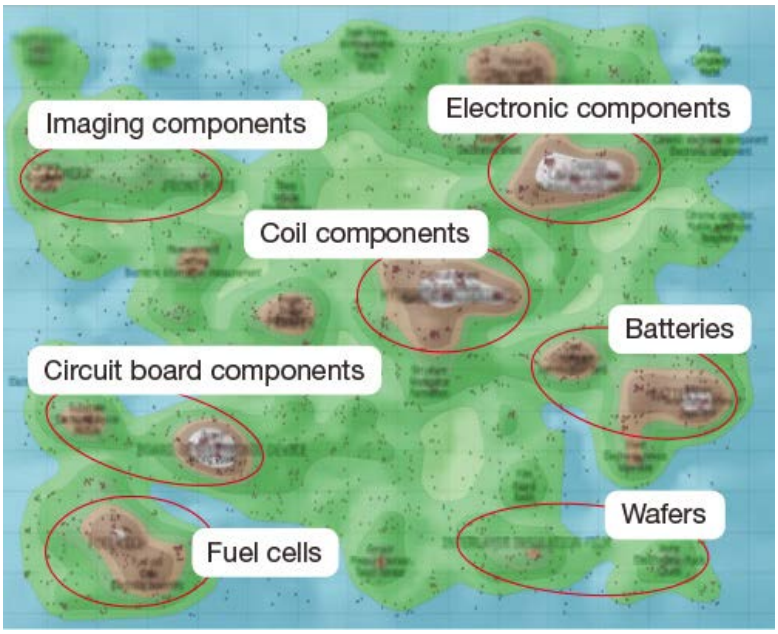


Number of Patents Held as of March 31, 2024	
Domestic patents	3,536
Foreign patents	4,780

What We Aim for



[IP Landscape Example]
Search for New Applications for NGK's Retained Technology



This is a visualization of our patent application distribution. The contour lines forming mountains and islands represent concentrations of patent applications. Dark colored regions indicate that numerous applications have been filed. This tool helps us engage in strategic IP activities by recognizing strengths and weaknesses in our own IP activities and in the IP strategies of our competitors.

Promotion of IP Activities

At the beginning of each fiscal year, the IP Strategy Department collaborates with business and development divisions to hold IP Activity Meetings for each product or development unit. The objective of these meetings is to have relevant departments discuss and set IP activity goals, and then propose IP strategy towards goal achievement. In FY2024, we are aiming to strengthen these activities. Persons responsible for IP strategies in each business and development division will lead efforts to strengthen IP activities. We will also aggressively promote IP awareness activities for employees. These activities will include holding IP seminars and introducing IP analysis methods. We will also provide business and development divisions with IP education led by IP Strategy Department staff.

New Business Creation and Early Commercialization

New Business Creation

Through patent analysis, we will work to create new businesses by exploring new development domains for our core technology and examining new applications for existing technology.
We are also proactively engaged in DX promotion. For example, we will use large language models (LLM) to search for promising new markets. We will use analysis results gained from IP information to extract candidates for collaborations and alliances related to new businesses. This will also contribute to development and business strategy formulation. Through such IP activities, we will promote new business creation and early commercialization that maximizes the strengths of the NGK Group.

Securing Competitive Advantage for New Businesses

To secure a competitive advantage for new businesses, we steadily work to secure IP rights for our own technology and build a strong patent strategy. With new businesses in particular, we are promoting the utilization of a mixed IP strategy that combines various IP rights. This includes a focus on patent strategy related to our supply chain, including business model patent utilization and design rights.
At the same time, we appropriately distinguish between important know-how that should be kept secret, and technology we should seek the acquisition of rights. Through patent analysis, we also work to ascertain competitor and technology trends. Based on those analysis results, we provide development and business departments and management with specific alliance candidates.
Through these IP activities, we are helping secure a competitive advantage for new businesses.

Strengthen Competitiveness of Existing Businesses

To maintain and strengthen the competitiveness of existing businesses, we conduct inventory of our held patents to ascertain the number of our right-to-practice patents and patents with influence over other companies. Through patent analysis for our own patents and competitor patents, we propose appropriate IP strategy that is aligned with the business environments of our products.
We are also engaged in a mixed IP strategy that combines various rights, including business model patent utilization, design rights, and trademark rights. This strategy promotes the multifaceted protection of our business and helps increase the brand value of the NGK Group. At the same time, we engage in effective IP management by appropriately distinguishing between important knowhow that should be kept secret and technology for which we pursue rights.
Through these IP activities, we are working to maintain and increase the competitiveness and profitability of the NGK Group.

New business

New business Creation

- Explore new development fields for core technology
- Explore new applications for existing products
- Extract candidates for collaboration and partnerships

New business

Securing competitive advantage for new business

- Ascertain competitor/ technology trends
- Build strong patent network
- Determining patentability or know-how

Existing business

Strengthen competitiveness of existing businesses

- Mixed IP strategy
- Analysis of own patents/ competitor patents
- Inventory of our retained patents

IP Activity Meetings

Governance Data Collection

Board of Directors

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	Unit
Number of directors	NGK	12	13	9	9	9	10	Persons
Number of outside directors		3	3	3	3	3	4	Persons
Number of Board of Directors meeting held		14	14	13	14	15	-	Times

Audit & Supervisory Board

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	Unit
Number of Audit & Supervisory Board members	NGK	4	4	4	4	4	4	Persons
Number of outside Audit & Supervisory Board members		2	2	2	2	2	2	Persons
Number of Audit & Supervisory Board meeting held		14	14	14	14	14	-	Times

Executive Officers

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	Unit
Number of executive officers (excluding those also serving as directors)	NGK	15	15	22	22	25	25	Persons
Male		15	14	21	21	24	25	Persons
Female		0	1	1	1	1	0	Persons

Compensation for Directors and Audit & Supervisory Board Members

Item	Scope		FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Compensation for directors and Audit & Supervisory Board members	NGK	Directors (excluding outside directors)	535	591	685	539	526	Million yen
		Audit & Supervisory Board members (excluding outside Audit & Supervisory Board members)	59	59	67	69	71	Million yen
		Outside officers	66	66	68	70	70	Million yen

Measures for Returning Profits to Shareholders

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Dividends per share	NGK	50	30	63	66	50	Yen
Return on equity (ROE)		5.8	7.9	12.9	9.0	6.1	%

Intellectual Property Management

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Number of patents held (Japan)	NGK	3,513	3,521	3,374	3,448	3,536	Cases
Number of patents held (Overseas)		4,485	4,452	4,444	4,589	4,780	Cases

Compliance

Item	Scope	FY2019	FY2020	FY2021	FY2022	FY2023	Unit
Examples of legal violations	NGK Group	0	0	0	0	0	Cases
Number of helpline consultation cases	NGK	55	28	43	38	35	Cases
Instances of anticompetitive behavior	NGK Group	0	0	0	0	0	Cases
Number of position-based antiharassment training sessions	NGK	5	4	4	4	4	Times
Number of participants in position-based harassment training	NGK	419	417	448	514	455	Persons
Incidents of corruption or bribery	NGK Group	0	0	0	0	0	Cases

External Recognition of the NGK Group

Inclusion of the NGK Group in Major Indices

Dow Jones Sustainability Asia Pacific Index

Member of
Dow Jones Sustainability Indices
Powered by the S&P Global CSA

We have been selected to the Dow Jones Sustainability Asia Pacific Index for eight consecutive years. This index is part of the Dow Jones Sustainability Indices which is one of the leading indices for socially responsible investment.

FTSE4Good Index Series

FTSE4Good

The FTSE4Good Index Series is an ESG investment index created by FTSE Russell. Companies recognized for being excellent from environmental, social and governance perspectives are selected to be composite stocks.

FTSE4Good Index Series

FTSE Blossom Japan Index

FTSE Blossom Japan Index

The FTSE Blossom Japan Index targets Japanese companies. It is an index adopted by the Government Pension Investment Fund (GPIF) at the time of ESG investment.

FTSE Blossom Japan Index Series | FTSE Russell

FTSE Blossom Japan Sector Relative Index

FTSE Blossom Japan Sector Relative Index

The FTSE Blossom Japan Sector Relative Index is widely used to create and assess sustainable investment funds and other financial products.

FTSE Blossom Japan Index Series | FTSE Russell

MSCI Japan Empowering Women Index (WIN)

2024 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

THE INCLUSION OF NGK INSULATORS IN ANY MSCI INDEX, AND THE USE OF MSCI LOGOS, TRADEMARKS, SERVICE MARKS OR INDEX NAMES HEREIN, DO NOT CONSTITUTE A SPONSORSHIP, ENDORSEMENT OR PROMOTION OF NGK INSULATORS BY MSCI OR ANY OF ITS AFFILIATES.
THE MSCI INDEXES ARE THE EXCLUSIVE PROPERTY OF MSCI. MSCI AND THE MSCI INDEX NAMES AND LOGOS ARE TRADEMARKS OR SERVICE MARKS OF MSCI OR ITS AFFILIATES.

We have been selected to the MSCI Japan Empowering Women Index (WIN) adopted by the GPIF for operation. The index is composed of companies that excel in gender diversity.

MSCI Japan ESG Select Leaders Index

2024 CONSTITUENT MSCI NIHONKABU ESG SELECT LEADERS INDEX

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We have been selected to the MSCI Japan ESG Select Leaders Index, which has been created by selecting companies with excellent ESG ratings, and adopted by the GPIF for investment targets.

S&P/JPX Carbon Efficient Index

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The S&P/JPX Carbon Efficient Index is an ESG index jointly developed by the S&P Dow Jones Indices (S&P) and the Tokyo Stock Exchange of the Japan Exchange Group (JPX). We have received a rating of “9” in the decile classification and an evaluation of “discloses information” for our information disclosure.

ESG-Related External Recognition

CDP

The CDP is an international non-profit organization. It engages in activities to request from companies the disclosure of environmental-related information such as on greenhouse gas emissions and climate change initiatives. We have received an A- for "Climate Change," and a B for "Water Security" and "Supplier Engagement Rating."

Next Nadeshiko: Companies Supporting Dual-Career and Co-parenting

In FY2023, we were jointly selected by the Ministry of Economy, Trade and Industry (METI) and the Tokyo Stock Exchange for the Next Nadeshiko: Companies Supporting Dual-Career and Co-parenting list. This recognizes companies which are particularly outstanding in terms of supporting dual-careers and co-parenting regardless of gender.

L-Boshi

We acquired level 3 certification, the highest rank, of L-Boshi from the Ministry of Health, Labour and Welfare in August 2019. This serves as proof that we are an excellent company in terms of the initiatives we are undertaking to advance women in the workplace.

Platinum Kurumin

We were certified as a childcare support company based on the Act on Advancement of Measures to Support Raising Next-Generation Children in 2012. We have acquired the next-generation certification mark "Platinum Kurumin" in 2023.

Corporate Outline/NGK Group Website (As of March 31, 2024)

Corporate Outline

Company name	NGK INSULATORS, LTD.
Address	2-56 Suda-cho, Mizuho, Nagoya 467-8530, Japan Telephone + (81) 52-872-7181
Established	May 5, 1919
Paid-in capital	70.1 billion yen
Net sales	578.9 billion yen (consolidated, for FY2023)

Consolidated subsidiaries	47	
Equity-method affiliates	1	
Employees	NGK	4,775
	Consolidated	19,540
Stock exchange code	5333	

NGK Group Website

This booklet is an archive of our sustainability initiatives as of the end of August 2024 under the title of the NGK Sustainability Website Data 2024 (PDF). Our website also has sustainability information, in addition to detailed corporate information and investor relations.

Sustainability
https://www.ngk-insulators.com/en/sustainability/

NGK REPORT 2024
https://www.ngk-insulators.com/en/sustainability/pdf/2024/ngk2024_en.pdf

Company Information
https://www.ngk-insulators.com/en/info/

Investor Relations
https://www.ngk-insulators.com/en/ir/

Group Companies/Editorial Policy (As of March 31, 2024)

NGK Group Locations

NGK Headquarters, Sites, Branches, and Sales Offices

Headquarters/Nagoya Site
Chita Site/Komaki Site/Ishikawa Plant
Tokyo Main Office/Osaka Branch/Sapporo Sales Office/Sendai Sales Office/Hokuriku Sales Office/
Hiroshima Sales Office/Takamatsu Sales Office/Fukuoka Sales Office

NGK Group

JAPAN

ENERGY SUPPORT CORPORATION
KANSAI ENERGYS CORPORATION
KYUSHU ENERGYS CO., LTD.
HOKURIKU ENERGYS CORPORATION
ENERGYS SANGYO CORPORATION
AKECHI INSULATORS, LTD.
NGK OKHOTSK, LTD.
NGK ELECTRONICS DEVICES, INC.
NGK CERAMIC DEVICE CO., LTD.
NGK METEX CORPORATION
NGK FINE MOLDS, LTD.
NGK CHEMITECH, LTD.
NGK FILTECH, LTD.
NGK ADREC CO., LTD.
NGK KILNTECH CORPORATION
NGK LIFE CO., LTD.
NGK YU-SERVICE CO., LTD.
ENA ELECTRIC POWER Co., Ltd.
ABASHIRI ELECTRIC POWER Co., Ltd.
NR-Power Lab Co., Ltd.

NORTH AND CENTRAL AMERICA

NGK-LOCKE, INC.
NGK CERAMICS USA, INC.
NGK AUTOMOTIVE CERAMICS USA, INC.
NGK METALS CORPORATION
FM INDUSTRIES, INC.
NGK ELECTRONICS USA, INC.
NGK CERAMICS MEXICO, S. DE R.L. DE C.V.

EUROPE

NGK BERYLCO U.K. LTD.
NGK CERAMICS EUROPE S.A.
NGK EUROPE GMBH
NGK DEUTSCHE BERYLCO GMBH
NGK BERYLCO FRANCE
NGK CERAMICS POLSKA SP. Z O.O.

ASIA, OCEANIA

NGK (CHINA) INVESTMENT CO., LTD.
NGK CERAMICS SUZHOU CO., LTD.
NGK TECHNOCERA SUZHOU CO., LTD.
NGK AUTOMOTIVE CERAMICS KOREA CO., LTD.
P.T. NGK CERAMICS INDONESIA
SIAM NGK TECHNOCERA CO., LTD.
NGK CERAMICS (THAILAND) CO., LTD.
NGK TECHNOLOGIES INDIA PVT. LTD.
NGK STANGER PTY LTD.

Editorial Policy

NGK has created a dedicated sustainability section on its corporate website in order to deliver information about the NGK Group's environmental, social and governance (ESG) initiatives for a sustainable society to a broad range of stakeholders in a timely manner.
We have archived our initiatives as of the end of August 2024 under the title of the NGK Group Sustainability Website Data 2024 (PDF). Plus, we have collected data on each initiative over time in our ESG Data Collection (Environmental) (Social) (Governance).
We also publish the NGK Report which conveys financial and non-financial information together with business strategies in a concise and clear manner to foster greater understanding of the NGK Group's corporate value and vision.

■Reporting Boundary
NGK and its related subsidiaries (both domestic and international).
The relevant reporting boundary is indicated in each data disclosure.

■Target Period
April 1, 2023 to March 31, 2024; however, information on new initiatives is updated as needed.

■Forward-Looking Statements
This website contains forward-looking statements including performance forecasts. These statements are based on information available at present and on certain assumptions judged to be rational. Actual results may differ due to a number of factors.

Deloitte.
デロイト トーマツ

（TRANSLATION）

Independent Practitioner's Assurance Report

October 15, 2024

Mr. Shigeru Kobayashi
President,
NGK Insulators, Ltd.

Tomoharu Hase
Representative Director
Deloitte Tohmatsu Sustainability Co., Ltd.
3-2-3, Marunouchi, Chiyoda-ku, Tokyo

We have undertaken a limited assurance engagement of the consolidated production bases and non-consolidated energy-origin CO_2 emissions (Scope1 and 2) indicated with ☑ for the year ended March 31, 2024 (the "CO_2 Information") included in the "NGK Group Sustainability Website Data 2024 (PDF)" (the "Report") of NGK Insulators, Ltd. (the "Company").

The Company's Responsibility

The Company is responsible for the preparation of the CO_2 Information in accordance with the calculation and reporting standard adopted by the Company (stated in the Report, Material Balance Calculation Basis). CO_2 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 Management

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 Management 1, *Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements*, and accordingly maintain a comprehensive system of quality management 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_2 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 CO_2 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

NGK INSULATORS, LTD.

NGK Group Sustainability Website Data 2024

■ For more information:
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NGK Insulators, Ltd.
ESG Management Department
E-mail: pr-office@ngk.co.jp

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