



NGK Group
Sustainability Website Data
2023

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Sustainability

Message from the President

We are trying to become a sustainable company that can solve problems facing society through our unique ceramic technologies.



President

Shigeru Kobayashi

In recent years, challenges such as uncertainty in international politics and increasingly serious global environmental problems have dramatically altered the environment in which we operate. Facing such circumstances, we feel a strong sense of crisis and know that we must adapt in order to survive as a company.

In 2021, with an eye toward 2050, we announced our medium- to long-term vision as the NGK Group Vision: Road to 2050. Therein, we envision what we want to be based on our Group philosophy of "enriching human life by adding new value to society." And we have defined five transformations to enact in order to achieve this vision. With these five transformations, our Groups has positioned ESG at the core of our management activities, as evidenced by their immediate embrace of ESG management that emphasizes the environmental, social, and governance.

In April 2023, we formulated the NGK Group Basic Sustainability Policy and identified several material issues to further clarify the direction of the NGK Group.

The NGK Group Basic Sustainability Policy serves as a guideline for future ESG management, and clearly outlines three areas: 1) Basic approach, 2) Identification of material issues (materiality) and promotion of initiatives, and 3) Responsibilities of the Board of Directors. The issues that are material with respect to achieving our vision, are those which are important to both the NGK Group and to our stakeholders, as well as those which have been identified as specific issues facing society which the NGK Group should focus on. If we want to expand our business globally in the future, I believe that we must be able to properly explain to stakeholders what the NGK Group aims to achieve and what we believe is important when conducting business. I also believe that identifying material issues will make it easier for employees to understand and embrace the reasons they take responsibility for this business.

Among the material issues we need to address, one that is particularly important to our stakeholders and has a large impact on our business, is climate change. There is tremendous potential for us to take advantage of NGK Group technologies in products and services that help reduce CO₂ emissions. Any individual or company can reduce their own CO₂ emissions, but only a few companies can develop businesses

that contribute to the direct reduction of CO₂ emissions. Toward this end, I want to promote concrete business development to further contribute to emissions reductions.

Another area that I believe we should focus on is respect for human rights. In 2021, we established the NGK Group Human Rights Policy and are accelerating our efforts to promote respect for human rights. This includes conducting human rights due diligence surveys at all Group locations. We recognize that it is necessary for us to further deepen such efforts throughout our entire supply chain as we move forward.

Since our founding, the NGK Group's reason for existing has been to solve the problems facing society through our products and services. So we have engaged in management that had led to our current ESG approach. In light of the changing times, we have further clarified the direction the NGK Group should take by formulating our Basic Sustainability Policy and identifying several materiality issues. But our underlying values and passion remain unchanged. We aim to review and recognize the things we have worked on and built up in the more than 100 years since our founding, then use these to further enhance ESG management.

Sustainability

ESG Management

[NGK Group Basic Sustainability Policy](#) ▾[Identification of Materiality](#) ▾[ESG Action System](#) ▾[NGK Group ESG Management](#) ▾[Communication with Stakeholders](#) ▾[Endorsement and Participation in Initiatives](#) ▾[Position on SDGs](#) ▾

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 achievement 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](#) >

Identification of Materiality

The NGK Group identified its Materiality in April 2023 based on the NGK Group Basic Sustainability Policy. Our overall perspective on materiality is laid out below.

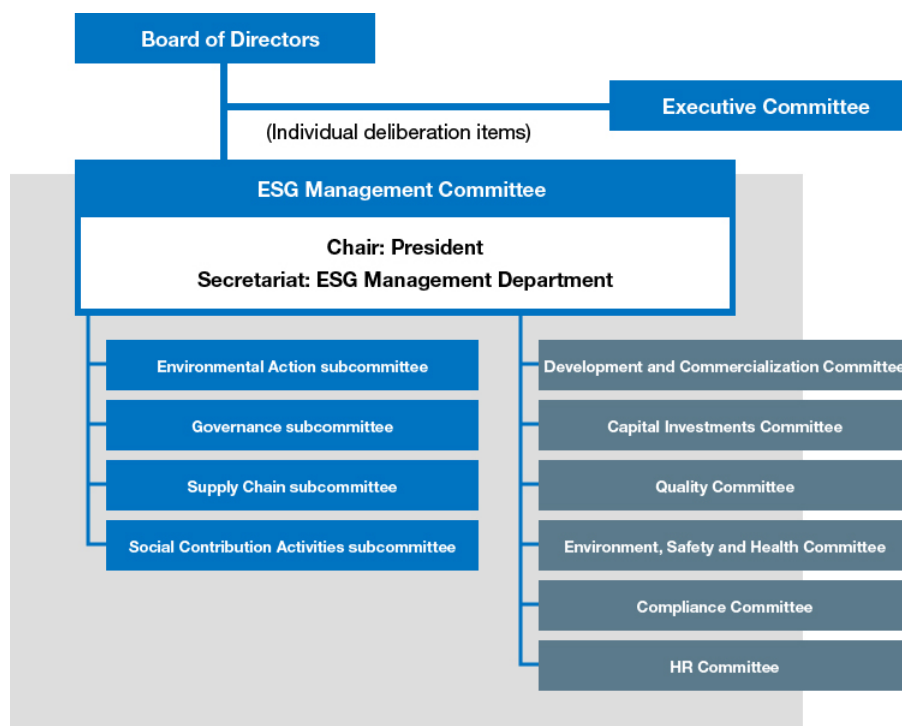
[Materiality](#) >

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



NGK Group ESG Management

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	<ul style="list-style-type: none"> Initiatives for climate change Promotion of resource recycling Prevention of environmental pollution Conservation and restoration of biodiversity
S	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Compliance Risk management Corporate governance

Key ESG Activity Themes in FY2023

Key themes	Main activities	Activity leader
Environmental initiatives aimed at achieving Vision	<ul style="list-style-type: none"> Internal carbon pricing towards net zero CO₂ 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Reviewing purchasing policy and Supply-Chain CSR Guidelines 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Formulating, implementing, and carrying out NGK Group social contribution activities policy Support for foreign nationals 	Social Contribution Activities subcommittee

FY2022 ESG Management Committee Achievements

Times	Date	Topics of discussion
1st	April 2022	<ul style="list-style-type: none"> Positioning of ESG Management Committee Awareness of sustainability issues facing our group Annual action plans for each subcommittee
2nd	May 2022	<ul style="list-style-type: none"> ESG Management Lecture "Sustainability Management to Increase Corporate Value" Handling prime market requirements in revised corporate governance code Governance report
3rd	June 2022	<ul style="list-style-type: none"> Fifth 5-Year Environmental Action Plan Green bond reporting Handling ESG assessment Production status report on NGK Report 2022
4th	September 2022	<ul style="list-style-type: none"> Status of response to Group ESG issues Environmental Value Acquisition Plan Organizing policy structure with regards to sustainability Identifying materiality

Times	Date	Topics of discussion
5th	December 2022	<ul style="list-style-type: none"> • Status of activities towards updating TFCF disclosure • Identifying materiality (interim discussion) • Formulating Basic Sustainability Policy (interim report) • Organization of policy system for sustainability (status report) • Formulation of NGK Group Tax Policy • Sustainability information disclosure through annual securities report
6th	March 2023	<ul style="list-style-type: none"> • Formulation of Sustainability Policy • Identifying materiality • Information disclosure based on TCFD recommendations • Social contribution activities • Creation of NGK Report 2023 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, 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.

[> NGK Group Corporate Business Principles](#)

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.	<ul style="list-style-type: none"> Enhancement of customer satisfaction Quality improvement 	<ul style="list-style-type: none"> Official website Contact desk Participation in exhibitions Open innovation
Suppliers	With a basic policy centered on the three principles of openness and fairness, partnership, and relationship with society, the NGK Group is engaged in fair, free, and transparent business transactions with the suppliers in our supply chain. We also established a supplier helpline to provide unwavering support for important inquiries in an effort to build and maintain fair supplier relationships.	<ul style="list-style-type: none"> Realize fair, free, and transparent transactions Exchange information with suppliers Establish better supply chain 	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Enhancement of corporate value 	<ul style="list-style-type: none"> General Meeting of Shareholders Information sessions Individual visits and interviews Participation in IR events Responding to ESG investment Official website
Employees	The NGK Group strives to create a safe and comfortable workplace environment with respect for employee humanity. We also support the growth of human resources and fair treatment enabling each employee to maximize their skills.	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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
Regional Communities	We proactively engage in social contribution activities in response to community needs with the intent of becoming a corporate citizen trusted by society with concern for social issues in all countries and regions where we do business.	<ul style="list-style-type: none"> Contribution to regional communities as a trusted corporate citizen 	<ul style="list-style-type: none"> Collaborative activities with NPOs, etc. Volunteer activities by employees Social contribution activities in cooperation with labor unions Invitation to plant tours and events
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.	<ul style="list-style-type: none"> Promotion of initiatives to resolve social issues 	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Development of scientific technologies Development of technologies that will contribute to solving social issues 	<ul style="list-style-type: none"> Joint research

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](#)



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](#)

[Task Force on Climate-Related Financial Disclosures \(TCFD\)](#)



SBTi (Science Based Targets initiative)

In April 2022, NGK submitted a commitment letter to the SBTi (Science Based Targets initiative), the certification organization for Science Based Targets (SBT). Going forward, we will formulate a reduction plan for Scope 3 in addition to Scope 1 and 2. Once our science based targets (SBT) have been approved, we will actively encourage our suppliers to pursue CO₂ emissions reductions.

[SBTi \(Science Based Targets initiative\)](#)

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 CO₂ emissions by 2050 and has been working on expanding its use of renewable energy as a strategy to achieve this target.

[RE100](#)

RE100

CLIMATE GROUP



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.

SUSTAINABLE DEVELOPMENT GOALS

	Goals	Value provided by the NGK Group
	End poverty in all its forms everywhere	<ul style="list-style-type: none"> — Creating appropriate employment helps to end poverty — The NGK Group's climate change countermeasures help mitigate natural disasters
	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	<ul style="list-style-type: none"> — The social infrastructure created by the NGK Group's products helps secure equal access to work opportunities
	Ensure healthy lives and promote well-being for all at all ages	<ul style="list-style-type: none"> — High-output, high-efficiency semiconductor lasers using gallium nitride (GaN) wafers are a substitute for ultra-high-pressure mercury lamps, thus contributing to reduced use of mercury — 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

	<p>Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p>	<ul style="list-style-type: none"> — Creating appropriate employment gives people the chance to have equal access to education
	<p>Achieve gender equality and empower all women and girls</p>	<ul style="list-style-type: none"> — 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
	<p>Ensure availability and sustainable management of water and sanitation for all</p>	<ul style="list-style-type: none"> — Ceramic membrane filters provide highly safe water — Ceramic membrane filters purify wastewater
	<p>Ensure access to affordable, reliable, sustainable, and modern energy for all</p>	<ul style="list-style-type: none"> — 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
	<p>Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all</p>	<ul style="list-style-type: none"> — Creating appropriate employment and providing employees with a satisfying work environment contributes to economic growth
	<p>Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation</p>	<ul style="list-style-type: none"> — 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
	<p>Reduce inequality within and among countries</p>	<ul style="list-style-type: none"> — We prevent discrimination and take prompt and appropriate action when violations occur
	<p>Make cities and human settlements inclusive, safe, resilient, and sustainable</p>	<ul style="list-style-type: none"> — NAS batteries enable innovation in urban energy management for the creation of sustainable cities

	<p>Ensure sustainable consumption and production patterns</p>	<ul style="list-style-type: none"> — We efficiently use the natural resources used to make ceramics
	<p>Take urgent action to combat climate change and its impacts</p>	<ul style="list-style-type: none"> — NAS batteries aid in the fight against climate change by allowing stable supply of renewable energy — DCB and AMB substrates support stable power supply in renewable energy applications that use power modules
	<p>Conserve and sustainably use the oceans, seas, and marine resources for sustainable development</p>	<ul style="list-style-type: none"> — Ceramic membrane filters purify wastewater to prevent marine pollution
	<p>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</p>	<ul style="list-style-type: none"> — We protect biodiversity on land owned by the NGK Group
	<p>Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels</p>	<ul style="list-style-type: none"> — 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
	<p>Strengthen the means of implementation and revitalize the global partnership for sustainable development</p>	<ul style="list-style-type: none"> — We encourage and promote effective partnerships among governments, corporations, and society as a whole

Sustainability

Materiality

[Basic Approach](#) | [Materiality System](#) | [Management Approach for Each Materiality](#)

Basic Approach

The NGK Group identified its Materiality in April 2023 based on the NGK Group Basic Sustainability Policy. We have identified these as issues that are important to both our Group and the stakeholders and as social issues on which our Group should particularly place focus. By efficiently and effectively utilizing our limited management resources to address these materialities, the NGK Group seeks to maximize value creation for both the Group and our stakeholders. We believe that doing so will lead to the realization of our NGK Group Vision.

Going forward, we are planning to formulate concrete action plans for identified materialities and KPIs serving as indicators to operate such plans. Since we also recognize that along with the change in the environment, importance of issues can change, or new issues can arise, we will revise our materialities as necessary.

Materiality
Initiatives for climate change
Promotion of resource recycling
Prevention of environmental pollution
Conservation and restoration of biodiversity
Pursuit of quality and product safety
Contribution to digital social infrastructure
Enhancing value of human resource
Respecting human rights
Promotion of sustainable procurement

Materiality Identification Process

Step 1: Listing of Issues

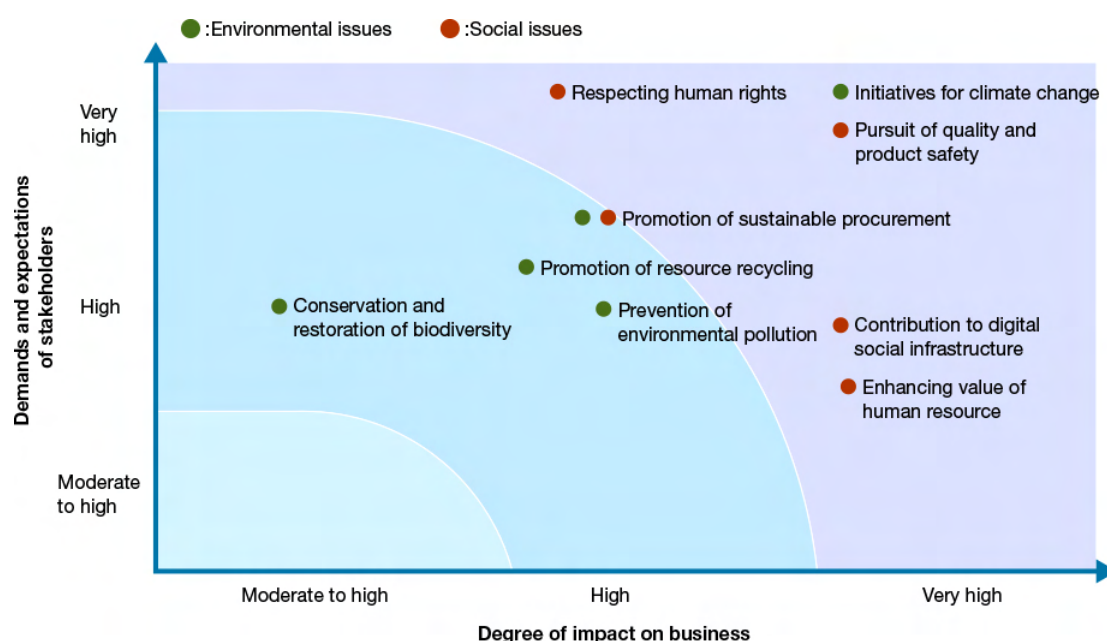
With reference to evaluations by ESG evaluation bodies, international frameworks and guidelines such as the GRI Standards and the SDGs, and other resources, we created a list of environmental, social, and governance issues. Of these, we listed those environmental and social issues that have a significant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

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 them along axes of "degree of impact on business" and "demands and expectations of stakeholders," 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 in terms of degree of impact on our 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

What we want to be	Materiality	The value we bring to society	Related SDGs	Risks (◆)	Opportunities (◇)	Main initiatives
A company to contribute to carbon neutrality and digital society with our unique ceramic technologies	Initiatives for climate change	We will tackle carbon neutrality throughout the value chain and aim for net-zero CO ₂ emissions in our business activities. By accelerating the development of carbon neutrality-related products through the use of data and digital technologies, and by developing and providing products and services with our unique ceramic technologies at the core, we will 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	Global warming mitigation measures (Business processes) Assessment and disclosure of emissions The NGK Group's CN-related products and services Risk assessment and countermeasures based on climate scenarios (Adaptation measures) Utilization of sustainable financing Cooperation with external organizations
	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 Water resource security ◆ Damage to brand reputation ◆ Impacts on operations; increase in costs ◆ Water pollution	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 Water resource security ◇ Enhancement of brand reputation ◇ Expansion of business opportunities for water treatment-related products (membranes, etc.)	Resources Reduction of emissions Development of resource recycling-oriented business models Recycling technology development Water resource security Sharing of policies and fundamental stance Effective use of water resources Management of water risks Water treatment business-related products Cooperation with external organizations
	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 The NGK Group's products and services that contribute to environmental protection Contribution to local communities
	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 greenery development
	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 (QRE-P (Quality Risk Elimination-Process) activities) QuIC (Quality up Innovation Challenge) activities Strengthening of quality management education Expanding quality assurance to service provision Guarantee of product safety
	Contribution to digital social infrastructure	We will continue contributing to the advancement of digital technologies globally through the supply of products based on our unique ceramic technologies. We also fulfill our responsibilities as a member of a cultural and secure digital society by establishing strong information security.	  	◆ 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	Development of new digital-related products Expansion of digital-related business Sharing of policies and fundamental stance Creation of an organization and implementation for information security Education and training of information security Creation of an organization and education for personal information protection
	Enhancing value of human resource	We will 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 embrace challenges and teamwork	  	◆ 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 DEI promotion ◇ Growth through human resource development ◇ Productivity enhancement	Labor practices • Review of personnel systems • Work-life balance • Labor-management initiatives Diversity • Review of local recruitment policies • Programs to support our diversity promotion system • Initiatives to promote diversity Human resource development • Human resource development for employees • Securing and maintenance of human resources Occupational safety and health • Sharing of policies and fundamental stance • Initiatives for safety, health, and sanitation • External certification of our occupational safety and health management system • Safety and health education Health and productivity management • Sharing of policies and fundamental stance • Initiatives to shorten total working hours • Activities to promote mental and physical health • Tier-based mental care education • Initiatives to promote 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 Human rights risk investigation Initiatives for human rights due diligence Introduction of a grievance mechanism Human rights education Communication of human rights initiatives
	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 ◆ Tightening of regulations on chemical substances 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 Supply chain management system Risk assessment and monitoring of suppliers Requests and demands toward suppliers Support for suppliers' initiatives Product design envisioning sustainable procurement

Management Approach for Each Materiality

The articles linked below explains about the NGK Group's basic approach to each materiality, risks and opportunities, and how we approach issues.

Initiatives for Climate Change >	Promotion of Resource Recycling >	Prevention of Environmental Pollution >
Conservation and Restoration of Biodiversity >	Pursuit of Quality and Product Safety >	Contribution to Digital social Infrastructure >
Enhancing Value of Human Resource >	Respecting Human Rights >	Promotion of Sustainable Procurement >

Sustainability

Materiality: Initiatives for Climate Change

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

Considering the intensified damage from natural disasters, impact on the ecosystem, food crisis due to unstable weather, negative impact on human health, etc., climate change is, in terms of its scale, scope and severity, one of the most serious problems confronting humankind now.

Internationally, the Paris Agreement in 2015 set a goal of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels. Additionally, according to the Special Report on Global Warming of 1.5°C issued from the Intergovernmental Panel on Climate Change (IPCC), it is necessary to reduce anthropogenic CO₂ emissions to net zero by 2050.

The NGK Group has manufacturing sites globally and generates greenhouse gases at the stage of raw material procurement or when products are used in the entire value chain; therefore, we recognize our responsibility of contributing to the realization of carbon neutrality. Furthermore, as climate change and initiatives taken in response affect the NGK Group's business in the form of risks and opportunities, we recognize that stakeholders expect us to respond appropriately from a medium- and long-term viewpoint.

The NGK Group will, on the basis of the international recognition it earned and its relationship with its Group companies, aim to contribute to society and the protection of the environment, and at the same time, improve its corporate value by developing its business with the recognition that tackling climate change is a priority issue.

The Value We Bring to Society

We will tackle carbon neutrality throughout the value chain and aim for net-zero CO₂ emissions in our business activities.

By accelerating the development of carbon neutrality-related products through the use of data and digital technologies, and by developing and providing products and services with our unique ceramic technologies at the core, we will contribute to the realization of a carbon-neutral society by 2050.

Related SDGs



Risks and Opportunities

Risks	Opportunities
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Expansion of CN-related business opportunities Reduction of costs Enhancement of our brand reputation

Approach

The NGK Group announced NGK Group Vision Road to 2050 in 2021 and formulated NGK Group Environmental Vision in April of the same year. In this vision, we have disclosed a strategic roadmap showing how we will achieve net-zero CO₂ emissions within the entire Group, and have been proactively working to realize a carbon-neutral society based on the NGK's Core Policy on the Environment. Specifically, we have formulated the Fifth 5-Year Environmental Action Plan as our environmental activity targets for FY2025, and based on this plan, we are promoting initiatives to realize a carbon-neutral society through internal and external collaboration.

Furthermore, regarding the risks and opportunities of the NGK Group related to climate change, we will continue to enhance communication with the capital market by proactively disclosing information based on the TCFD recommendations.

- > [NGK Group Vision](#)
- > [NGK Group Environmental Vision](#)
- > [NGK's Core Policy on the Environment](#)
- > [5-Year Environmental Action Plan](#)
- > [Information Disclosure Based on TCFD Recommendations](#)
- > [Endorsement and Participation in Initiatives](#)

Main Initiatives

The NGK Group's main initiatives related to climate change are as follows.

- > [Initiatives Toward Carbon Neutrality](#)
- > [Environmental / Social Contributions Through Our Products and Services](#)
- > [Sustainable Finance](#)

Toward the Future

Toward achieving net-zero CO₂ emissions by 2050, the NGK Group is advancing net-zero CO₂ emissions project based on the Fifth 5-Year Environmental Action Plan within the Environment Action Subcommittee, a company-wide cross-sectoral organization. In FY2022, the second year of the plan, we achieved limiting CO₂ emissions to 560,000 tons against the target of 600,000 tons. Initiatives made within the NGK Group, such as installing photovoltaic power generation systems, procuring renewable energy, and switching to carbon-neutral LNG, contributed to achieving the target.

In FY2023, along with the above initiatives, we will further promote energy-saving activities, reductions through improving processes and utilizing waste heat, and advancing other initiatives to achieve our FY2025 target of limiting emissions to 550,000 tons.

* LNG that is deemed to generate no CO₂ by offsetting with CO₂ credits

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

The articles linked below explains about the NGK Group's basic approach to each materiality, risks and opportunities, and how we approach issues.

Initiatives for Climate Change	>	Promotion of Resource Recycling	>	Prevention of Environmental Pollution	>
Conservation and Restoration of Biodiversity	>	Pursuit of Quality and Product Safety	>	Contribution to Digital social Infrastructure	>
Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Sustainability

Materiality: Promotion of Resource Recycling

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

The importance of resource efficiency and sustainable management of natural resources has continued to grow in recent years.

Resource Efficiency: Potential and Economic Implications (Summary for Policy-Makers) published from the UNEP International Resource Panel reports that since the world's population quadrupled, and the amount of materials extracted and used increased eightfold between 1900 and 2005, it is critical to increase resource efficiency in order to meet the Sustainable Development Goals (SDGs) and climate change targets cost-effectively.

The NGK Group conducts businesses using natural resources, and a considerable amount of waste is generated during the manufacturing processes, such as when ceramic raw materials are procured or when water is used during manufacturing.

Therefore, we believe that increasing resource efficiency by properly managing resource usage and waste will contribute to the reduction of burdens on the global environment.

We also believe that increasing resource efficiency and appropriately responding to the transition to a recycling-oriented society by reducing costs through reducing the amount of resources used as well as by reducing dependence on specific resources to reduce the risk of supply chain disruption due to export restrictions, geopolitical turmoil, and disasters will lead to the enhancement of our competitiveness.

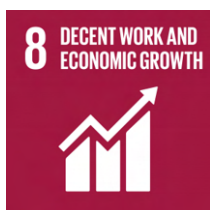
Based on this understanding, the NGK Group regards the promotion of resource recycling as an important issue in the environmental field, and will advance initiatives.

The Value We Bring to Society

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.

Related SDGs



Risks and Opportunities

Risks	Opportunities
<p>[Resources]</p> <ul style="list-style-type: none"> Depletion of resources and price inflation Geopolitical risks Delays in responses to resource conservation and resource reuse 	<p>[Resources]</p> <ul style="list-style-type: none"> 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
<p>[Water resource security]</p> <ul style="list-style-type: none"> Damage to brand reputation Impacts on operations; increase in costs Water pollution 	<p>[Water resource security]</p> <ul style="list-style-type: none"> Enhancement of brand reputation Expansion of business opportunities for water treatment-related products (membranes, etc.)

Approach

The NGK Group announced the NGK Group Vision: Road to 2050 in 2021 and formulated the NGK Group Environmental Vision in April of the same year. In this vision, we set forth contributing to the realization of a recycling-oriented society as one of our pillars. To realize this environmental vision, we have formulated the Fifth 5-Year Environmental Action Plan as our environmental activity targets for FY2025, and based on this plan, we are advancing initiatives through internal and external collaboration.

- > [NGK Group Vision](#)
- > [NGK Group Environmental Vision](#)
- > [NGK's Core Policy on the Environment](#)
- > [5-Year Environmental Action Plan](#)
- > [Endorsement and Participation in Initiatives](#)

Main Initiatives

The NGK Group's main initiatives related to the promotion of resource recycling are as follows.

- > [Initiatives for a Recycling-Oriented Society](#)

Toward the Future

The NGK Group is striving to enhance yield through improving its manufacturing processes and curtail waste generation through efforts such as the reuse of raw materials, while focusing on reducing final disposal volumes through recycling, in order to promote resource recycling. In FY2022, we achieved a reduction rate of 55% per unit sold for the amount of reduction of waste generation compared to FY2013, achieving the target of 46% as well as our FY2025 target of a 50% reduction. We will continue to investigate trends related to circular economy, and respond appropriately. We will also sort out and disclose examples of resource recycling within Group businesses, and examine policies aimed at achieving the recycling-oriented society set out in our NGK Group Environmental Vision by 2050.

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

The articles linked below explains about the NGK Group's basic approach to each materiality, risks and opportunities, and how we approach issues.

Initiatives for Climate Change	>	Promotion of Resource Recycling	>	Prevention of Environmental Pollution	>
Conservation and Restoration of Biodiversity	>	Pursuit of Quality and Product Safety	>	Contribution to Digital social Infrastructure	>
Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Sustainability

Materiality: Prevention of Environmental Pollution

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

Along with an increase in the world's population and economic development driven by business growth, an increasing amount of pollutants have been emitted to the atmosphere, water and soil. In particular, it is reported that hazardous chemical substances emitted into the environment have not only a negative impact on the environment, but also an adverse impact on human health. According to Making Peace with Nature, 2021 published from the United Nations Environment Programme (UNEP), pollution is estimated to cause some 9 million premature deaths annually, and keeping the planet healthy is key to providing health and well-being for all.

The NGK Group, which use chemical substances in manufacturing processes, recognizes that it is one of their social responsibilities to properly control chemical substances during the life cycle of products. We recognize that since failing to properly control chemical substances can lead to a compliance risk, a reputational risk, and a shutdown risk, it is necessary to control risks at international standards. On the other hand, tightening of environment-related regulations can lead to the expansion of the market for products to purify harmful waste, which can open the way for us to seize an opportunity to respond to pollution problems through providing environmental products and services.

With such recognition, the NGK Group defines the prevention of environmental pollution as one of the important issues, and promote initiatives.

The Value We Bring to Society

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 the creation of a safe and secure society.

Related SDGs



Risks and Opportunities

Risks	Opportunities
<ul style="list-style-type: none"> — Compliance — Handling of air, water and wastes — Handling of chemical substances — Impacts on local communities — Shrinking of internal combustion engine-related business 	<ul style="list-style-type: none"> — Expansion of exhaust gas-related business — Expansion of air and water quality-related business — Expansion of nuclear power-related waste treatment business

Approach

The NGK Group announced the NGK Group Vision: Road to 2050 in 2021, formulated the NGK Group Environmental Vision in April of the same year, and revised the NGK's Core Policy on the Environment based on our environmental vision.

Based on the guidelines for environmental action, regarding the handling of chemical substances by our Company, we strive to reduce the use of harmful substances and properly control those substances in compliance with related laws or regulations. In addition, regarding chemical substance contained in products, we share the NGK Group's Supply-Chain CSR Guideline and the NGK Group's Green Procurement Standard with our suppliers, and request them to observe the same control criterion in order to control such chemical substances throughout the entire life cycle of products. Furthermore, through utilizing our proprietary micropore creation and control technologies in a wide range of applications such as one for the treatment of exhaust gas or radioactive wastes, we work on the prevention of environmental pollution through our products and services.

[> NGK Group Vision](#)

[> NGK Group Environmental Vision](#)

[> NGK's Core Policy on the Environment](#)

[📄 NGK Group's Supply-Chain CSR Guideline \(PDF: 141KB\)](#)

[📄 NGK Group's Green Procurement Standard \(PDF: 446KB\)](#)

Main Initiatives

The NGK Group's main initiatives related to the prevention of environmental pollution are as follows.

[> Pollution Prevention](#)

[> Environmental / Social Contributions Through Our Products and Services](#)

Toward the Future

The NGK Group is working to control emissions into the atmosphere and water discharge while properly maintaining and improving the level of chemical substance control in compliance with regulations, including laws and guidelines. In FY2022, there was no serious violation of environment-related laws. We will continue to maintain this appropriate control structure in FY2023.

Additionally, in product development, we have created products contributing the reduction of environmental pollution including HONEYCERAM, which can purify harmful contents in the exhaust of automobiles. We will continue to develop, manufacture and sell products that contribute to the protection of the environment by utilizing our unique ceramic technologies in FY2023.

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

The articles linked below explains about the NGK Group's basic approach to each materiality, risks and opportunities, and how we approach issues.

Initiatives for Climate Change	>	Promotion of Resource Recycling	>	Prevention of Environmental Pollution	>
Conservation and Restoration of Biodiversity	>	Pursuit of Quality and Product Safety	>	Contribution to Digital social Infrastructure	>
Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Sustainability

Materiality: Conservation and Restoration of Biodiversity

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

Many of activities in our daily lives and socioeconomic activities depend on the various benefits that biodiversity produces, which is called ecosystem services. However, according to Global Assessment Report on Biodiversity and Ecosystem Services published from the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) in 2019, biodiversity and ecosystem services have been significantly lost over the past 50 years, which suggests that it is impossible to sustain economic growth by using traditional methods. In 2022, the Kunming-Montreal Global Biodiversity Framework was adopted as an international framework for biodiversity. This framework sets forth goals for 2050, and targets for 2030 that are consistent with the SDGs. We are acutely aware that it is vital to for the corporate sector to transform in order to achieve these goals.

However, since efforts for such transformation are likely to have an impact on our business activities themselves in the long run, it is important for us, the NGK Group, to understand how each business depends on and affects the natural environment in our value chain.

Considering this international trend and the NGK Group's relationship with nature, we define the conservation and restoration of biodiversity as an important issue, and promote initiatives.

The Value We Bring to Society

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.

Related SDGs



Risks and Opportunities

Risks	Opportunities
<ul style="list-style-type: none"> Damage to brand reputation Impacts on operations Impacts on supply chains, etc. 	<ul style="list-style-type: none"> Enhancement of our brand reputation Expansion of businesses and products with consideration of ecosystems

Approach

The NGK Group announced the NGK Group Vision: Road to 2050 in 2021, and formulated the NGK Group Environmental Vision in April of the same year. In this environmental vision, we set forth contributing to the realization of harmony with nature as one of our pillars. To realize this environmental vision, we have formulated the Fifth 5-Year Environmental Action Plan as our environmental activity targets for FY2025, and based on this plan, we are advancing initiatives through internal and external collaboration.

Furthermore, going forward, we will draw up strategies and a road map toward 2050 in the light of external trends.

- [> NGK Group Vision](#)
- [> NGK Group Environmental Vision](#)
- [> NGK's Core Policy on the Environment](#)

Main Initiatives

The NGK Group's main initiatives related to the conservation and restoration of biodiversity are as follows.

- [> Initiatives for Harmony with Nature](#)

Toward the Future

At the NGK Group, we view addressing the conservation of biodiversity as one of the important issues in the pursuit of realizing a sustainable society. In FY2022, we proceeded with an investigation on what companies are requested and expected to do in association with biodiversity and natural capital as well as on external trends, reported the findings to ESG Management Committee and shared the importance of the issue. In the future, for example, we will consider launching the assessment of risks and opportunities in line with the LEAP (Locate, Evaluate, Assess, and Prepare) approach advocated within the framework of the Task force for Nature-related Financial Disclosures (TNFD). We will also draw up strategies and a road map toward 2050.

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

The articles linked below explain about the NGK Group's basic approach to each materiality, risks and opportunities, and how we approach issues.

Initiatives for Climate Change	>	Promotion of Resource Recycling	>	Prevention of Environmental Pollution	>
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Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Materiality: Pursuit of Quality and Product Safety

- Basic Approach ▾
- Risks and Opportunities ▾
- Approach ▾
- Main Initiatives ▾
- Toward the Future ▾

Basic Approach

Quality and product safety have an influence on our customers and consumers staying beyond them. According to the Guidelines for Multinational Enterprises formulated by the Organisation for Economic Co-operation and Development (OECD) and ISO 26000, an international guidance on social responsibilities, consumers are defined as important stakeholders. Most of the NGK Group's customers are corporations; however, we are hoping to provide new values to consumers and eventually to society through products and services.

Our Group has, since its establishment, placed a high value on providing the quality and product safety exceeding customers' expectations. Pursuing quality and product safety will lead to strengthening the relationship with customers that we have built up, and developing and broadening the relationship with new customers, and eventually to embodying the NGK Group Philosophy of "Enriching Human Life by Adding New Value to Society." With this recognition, the NGK Group defines the pursuit of quality and product safety as an important issue, and will promote initiatives Group-wide.

The Value We Bring to Society

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.

Related SDGs



Risks and Opportunities

Risks	Opportunities
<ul style="list-style-type: none">Damage to brand reputationLitigation risks	<ul style="list-style-type: none">Enhancement of our brand reputationEnhancement of competitivenessExpansion of business opportunities

Approach

The NGK Group regard providing products and services contributing to the creation of a better social environment as one of our most important missions, and will put ourselves in the shoes of customers and endeavor to create quality trusted by the society. We hold up our quality policy of "NGK is dedicated to quality and committed to providing valuable products and services that are trusted by our customers and respected by society" based on the NGK Group Corporate Business Principles. Based on this quality policy, we set objectives every year and endeavor to create quality by putting ourselves in the customer's shoes.

- [> NGK Group Corporate Business Principles](#)
- [> Quality Policy](#)

Main Initiatives

The NGK Group's main initiatives related to the pursuing of quality and product safety are as follows.

- [> Pursuing Quality](#)
- [> Pursuing Product Safety](#)

Toward the Future

As in the past, the NGK Group will continue to promote activities to integrally pursue product quality and safety within the framework of the current quality activity system under the quality policy based on the NGK Group Corporate Business Principles through taking an approach of continuous improvement. We have established the "conformance with six quality items" including product safety, and have endeavored to improve product quality and safety as part of our Quality Risk Elimination Process activities (QRE-P activities). In addition, as a result of further promoting the improvement of quality of operations that we have been working on since 2018, the understanding and dissemination of quality compliance has progressed in our workplaces as well as among our Group companies, in which an organizational culture is being created where problems can be shared openly. In FY2023, we are planning to have each business division look into issues related to product safety and enhance our activities including risk assessment. In addition, we will work for preventative and recurrence-prevention measures by improving the work process reflecting the results of cause analysis of quality issues, and then we will further enhance working to the autonomy of improving the quality of operation.

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

The articles linked below explains about the NGK Group's basic approach to each materiality, risks and opportunities, and how we approach issues.

Initiatives for Climate Change	>	Promotion of Resource Recycling	>	Prevention of Environmental Pollution	>
Conservation and Restoration of Biodiversity	>	Pursuit of Quality and Product Safety	>	Contribution to Digital social Infrastructure	>
Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Sustainability

Materiality: Contribution to Digital Social Infrastructure

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

Along with the transition to a digital society, companies are collecting and analyzing an unprecedented amount of data and utilize them in business situations. This trend has positive impacts on society and the economy, such as the development of marketing tailored to each consumer's situation, and the increased efficiency of the manufacturing and the logistics industries; on the other hand, however, data privacy and security are becoming important issues.

This indicates that the NGK Group have both expanding business opportunities and the risks of handling data.

In terms of opportunities, demand is expected to increase in markets related to the transition to a digital society, including semiconductor manufacturing equipment and electronic devices.

However, considering that there is a growing risk of information leakage caused by cyber-attacks from outside, we acknowledge it is important to respond such risk appropriately in order to contribute to the realization of a digital society in the future.

Based on this recognition, we have determined that contributing to the digital social infrastructure is one of the most important tasks for the NGK Group, and we will promote our efforts.

The Value We Bring to Society

We will contribute to ensuring safety, security, and comfort of society through providing products and services using our unique ceramic technologies, for the advancement of digital society, which will accelerate in the future.

As a foundation for this, we will fulfill our responsibility as a member of a cultural and secure digital society by establishing strong information security under the circumstances where the safety of all information assets in our possession is strictly required.

Related SDGs



Risks and Opportunities


Risks	Opportunities
<ul style="list-style-type: none"> — Damage to brand reputation — Cyber attacks — Information leaks — Increase in the cost of security enhancement 	<ul style="list-style-type: none"> — Expansion of business opportunities related to digital society, etc. — Enhancement of our brand reputation

Approach

We are going to advance development toward the creation of new products in our business related to semiconductors and electronic components supporting the development of the fields of IoT, AI and communications.

To that end, we will endeavor to understand market needs and technological trends by making use of relationships with customers in various industries and consulting external advisers more than before. In addition, by collaborating with external partners and promoting open innovation, we will work with speed to solve issues of the ever-developing digital society.

Regarding the utilization of our Group's data, the NGK Group will appropriately manage information based on the Basic NGK Group Information Security Policy.

-  [New Value 1000](#)
- [> Basic NGK Group Information Security Policy](#)

Main Initiatives

The NGK Group's main initiatives related to contribution to a digital social infrastructure are as follows.

- [> Digital Society Business](#)
- [> Information Security](#)

Toward the Future

By utilizing ceramic materials and process technologies, we will create new products focusing on the development of various types of wafers, new ceramic packages, materials for semiconductor manufacturing equipment for the fields related to future broadband communications services, next-generation mobility services and semiconductors.

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

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Conservation and Restoration of Biodiversity	>	Pursuit of Quality and Product Safety	>	Contribution to Digital social Infrastructure	>
Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Sustainability

Materiality: Enhancing Value of Human Resource

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

Human resources are becoming more and more important for companies.

Their importance is increasing not only because of their importance as a source of competitive advantage in business activities, but also in that a company view its employees, who are members of society, as one of the stakeholders and provides them with opportunities for challenges, to play active roles and to grow.

The NGK Group has approximately 20,000 employees globally.

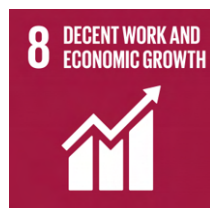
We believe that if all the employees embrace challenges and encourage each other to grow, it will lead to the realization of the NGK Group Vision. To this end, it is indispensable to provide ample opportunities that allow employees with various values and backgrounds to give full play to their abilities; otherwise, it will become impossible to hire and retain excellent human resources, resulting in a risk of the loss of competitiveness. We also recognize that ensuring the safety and health of our employees is the foundation of our work environment, and to that end, it is necessary to create an environment that allow them to work with peace of mind as well as to comply with laws and regulations.

Based on this understanding, the NGK Group defines the improvement of the value of human resource as an important issue, and promotes initiatives Group-wide.

The Value We Bring to Society

We will 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 embrace challenges and teamwork.

Related SDGs



Risks and Opportunities

Risks	Opportunities
<ul style="list-style-type: none"> Compliance Damage to brand reputation Declining competitiveness of recruitment and outflow of personnel Human resource development Rigidity of internal systems 	<ul style="list-style-type: none"> Recruitment and retention of personnel Active participation of diverse personnel by DE&I promotion Growth through human resource development Productivity enhancement

Approach

The NGK Group formulated the NGK Group Human Capital Management Policy in June 2023. In this human capital management policy, we establish two policies, that is, the Human Resource Development Policy and the Workplace Development Policy. We will improve the value of human resources of the Group through promoting measures based on these policies.

[> Human Capital Management](#)

Main Initiatives

The NGK Group's main initiatives related to the enhancing of value of human resources are as follows.

- [> Human Resources Management](#)
- [> Work-Life Balance](#)
- [> Diversity and Inclusion](#)
- [> Human Resource Development](#)
- [> Occupational Safety and Health](#)
- [> Health Management](#)

Toward the Future

We have promoted measures that contribute to the improvement of value of human resources through the Human Resources Department and the HR Committee, a cross-sectoral organization, with the aim of promoting Five Transformations toward the realization of the NGK Group Vision. Going forward, we will endeavor to steadily improve the effectiveness of Five Transformations through setting forth targets and measures based on the NGK Group Human Capital Management Policy formulated in June 2023 and manage their progress.

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

The articles linked below explains about the NGK Group's basic approach to each materiality, risks and opportunities, and how we approach issues.

Initiatives for Climate Change	>	Promotion of Resource Recycling	>	Prevention of Environmental Pollution	>
Conservation and Restoration of Biodiversity	>	Pursuit of Quality and Product Safety	>	Contribution to Digital social Infrastructure	>
Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Sustainability

Materiality: Respecting Human Rights

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

With the increased impact of corporate activities on society, there has been a growing public interest in not only their positive influences such as the improvement of the quality of people's lives, the creation of job opportunities, but also their negative influences. Public interest in respect for human rights in corporate activities is one of those examples showing such trend. The Guiding Principles on Business and Human Rights endorsed by the UN Human Rights Council in 2011 stipulates that one of the three pillars of the guiding principles is respect for human rights by a company, exhibiting international norms about how a company should respect human rights.

The NGK Group recognizes that it conducts business globally while having a relationship with many stakeholders, and as such, there are people who are affected by the NGK Group's business, not only within the Company, but throughout the entire value chain. Based on the belief that it is our Group's responsibility to respect their human rights, we define ensuring respect for human rights as one of our important issues and promote initiatives.

The Value We Bring to Society

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.

Related SDGs



Risks and Opportunities

Risks	Opportunities
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Enhancement of brand reputation Recruitment and retention of personnel

Approach

The NGK Group upholds respect for human rights in the NGK Group Corporate Business Principles, which declares: "We will strictly comply with international standards of human rights and respect diversity." In addition, we established the NGK Group Human Rights Policy in April 2021 based on the United Nations Guiding Principles on Business and Human Rights in order to ensure that the human rights of all people affected by the NGK Group's business activities will not be violated. Based on this policy, we will endeavor to reduce human rights risks throughout the value chain.

- > [NGK Group Corporate Business Principles](#)
- > [NGK Group Human Rights Policy](#)

Main Initiatives

The NGK Group's main initiatives related to respect for human rights are as follows.

- > [Respect for Human Rights](#)

Toward the Future

As part of our initiatives for the due diligence process to identify and assess human rights risks in our Group companies and supply chain, we utilize self-assessment questionnaires to grasp the actual status. In addition, regarding latent human rights risks, we strive to grasp the actual situation through using a mechanism for consultation and whistle-blowing. In FY2023, we will appropriately address human rights risks by increasing the number of subjects of the assessment and improving its content.

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Management Approach for Each Materiality

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Initiatives for Climate Change	Promotion of Resource Recycling	Prevention of Environmental Pollution
Conservation and Restoration of Biodiversity	Pursuit of Quality and Product Safety	Contribution to Digital social Infrastructure
Enhancing Value of Human Resource	Respecting Human Rights	Promotion of Sustainable Procurement

Sustainability

Materiality: Promotion of Sustainable Procurement

[Basic Approach](#) ▾[Risks and Opportunities](#) ▾[Approach](#) ▾[Main Initiatives](#) ▾[Toward the Future](#) ▾

Basic Approach

In recent years, along with the globalization of corporate supply chains, there is a growing concern over various social and environmental problems. In addition to problems related to long working hours and false description of goods occurring in Japan, there are problems that can cause human rights violations, environmental destruction, and climate change in the supply chain, such as forced labor and child labor, which are affecting the entire world. In addition, due to the growing consumers' awareness toward child labor, discrimination, forced labor, biodiversity, etc., there are cases in which a company is judged to be failing to fulfill its social responsibilities adequately, resulting in losing credibility, boycotts and suffering a severe impact on its business activities.

We recognize that even in the procurement of products, materials, raw materials, services, etc., a company needs to make efforts to address and prevent problems related to human rights and the environment, in addition to making conventional efforts for quality, performance, pricing and time to delivery. We also believe working together with suppliers to address these issues to increase the resilience of the supply chain will lead to providing products and services that customers can use with peace of mind in all aspects.

With such recognition, the NGK Group regards continuing to realize environmentally, socially and economically sustainable procurement throughout the entire supply chain as one of our most important tasks, and will promote initiatives together with our suppliers.

The Value We Bring to Society

Based on the three principles of "Open and Fair," "Partnership," and "Relationship with Society" in our Basic Purchasing Policy, we work with procurement partners making 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.

Related SDGs



Risks and Opportunities

Risks	Opportunities
[Environmental] <ul style="list-style-type: none"> Impacts on procurement due to increased environmental impact in the supply chain Increase in costs due to measures to reduce CO₂ emissions, etc. Demands from markets regarding waste and recycling Depletion of raw materials and rare metals Tightening of regulations on chemical substances 	[Environmental] <ul style="list-style-type: none"> Enhancement of our brand reputation Securing of stable procurement and reduction of costs through the utilization of alternative raw materials
[Social] <ul style="list-style-type: none"> Damage to our brand reputation Impacts on our business partners Impacts on procurement 	[Social] <ul style="list-style-type: none"> Enhancement of our brand reputation Building of a stable supply chain

Approach

The NGK Group has established its Basic Purchasing Policy centered on the three fundamental axes for purchasing activities, that is, "Open and Fair," "Partnership," and "Relationship with Society." We also request our suppliers to comply with the NGK Group's Supply-Chain CSR Guideline, which is based on the NGK Group Corporate Business Principles, various NGK Group policies, and various norms. When challenges arise, we will work with our suppliers to make necessary corrections in order to reduce sustainability risks in the supply chain.

- > [NGK Group Corporate Business Principles](#)
- > [Basic Purchasing Policy](#)
- > [NGK Group Human Rights Policy](#)
- > [NGK Group's Supply-Chain CSR Guideline \(PDF: 141KB\)](#)

Main Initiatives

The NGK Group's main initiatives related to the promotion of sustainable procurement are as follows.

- > [Supply Chain Management](#)

Toward the Future

As part of our efforts to promote and expand our CSR procurement activities, we have conducted surveys to grasp the actual status of CSR activities and ESG aspects of our major suppliers by using self-assessment questionnaires since FY2021, and according to their response, we provide follow-up support to individual suppliers to enhance their procurement capabilities. We will continue to clarify and improve our ESG issues in the entire supply chain, and make concerted efforts to reduce GHG Scope 3 emissions with the aim of realizing sustainable procurement.

For an overview of the NGK Group's materialities, please see [Materiality](#).

Management Approach for Each Materiality

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Initiatives for Climate Change	>	Promotion of Resource Recycling	>	Prevention of Environmental Pollution	>
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Enhancing Value of Human Resource	>	Respecting Human Rights	>	Promotion of Sustainable Procurement	>

Sustainability

NGK Group Core Policy on the Environment / Environmental Vision

[NGK's Core Policy on the Environment ▾](#)
[NGK Group Environmental Vision ▾](#)
[Carbon Neutrality Strategic Roadmap ▾](#)

Recognizing that protecting the environment is a vital issue that all of humanity must face, the NGK Group formulated its Core Policy on the Environment in April 1996 in order to bring its corporate activities into harmony with the environment. 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 making contributions to 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. On the basis of 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 by following the Guidelines for Environmental Action.

NGK's Core Policy on the Environment

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 >](#)
[NGK's Core Policy on the Environment >](#)

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

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 CO₂ emissions by 2050.

Toward a recycling-oriented society

We will contribute to the realization of a recycling-oriented society by reducing our natural resource consumption and developing and providing resource-efficient products.

Toward harmony with nature

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 CO₂ 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

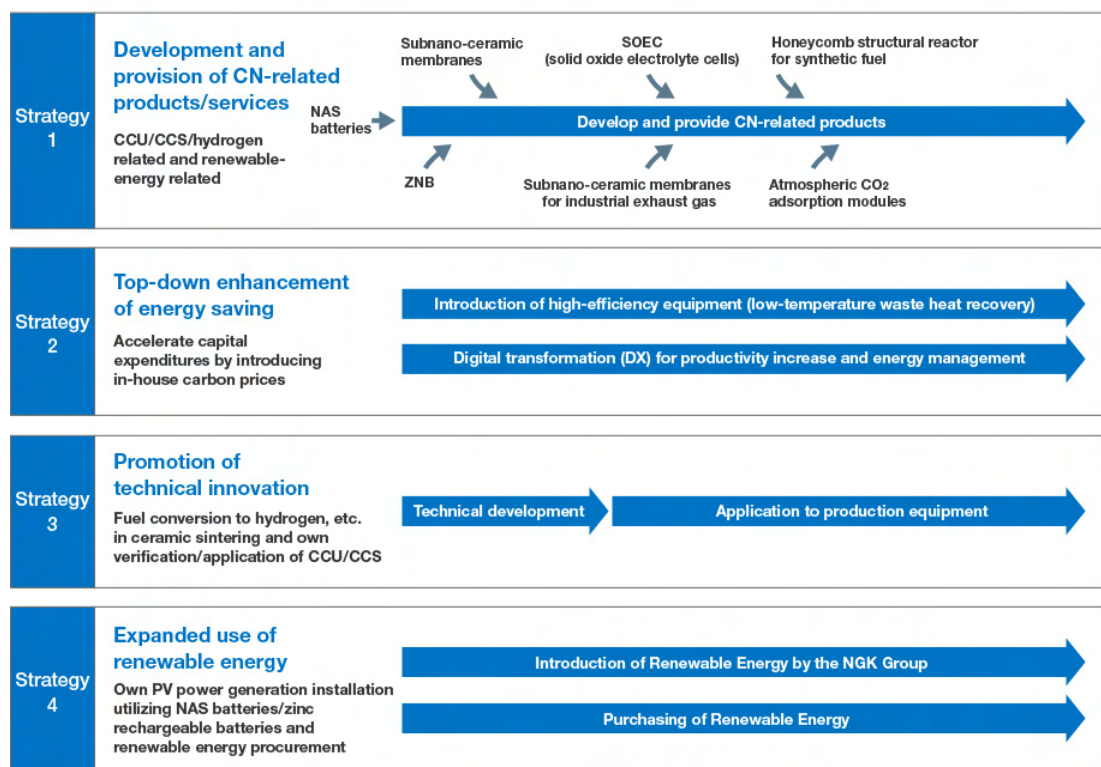
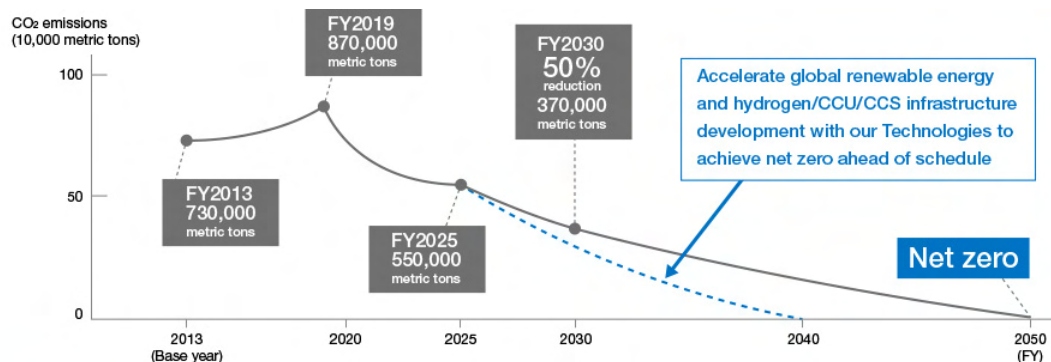
We will work to further enhance our existing energy conservation activities, as well as introduce high efficiency equipment and facilities and more energy-efficient operations.

Strategy 3: Promotion of technical innovation

Although the ceramics firing process requires fossil fuel which is responsible for CO₂ 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 manufacturing 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 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

Sustainability

5-Year Environmental Action Plan

[Outline of the Fifth 5-Year Environmental Action Plan \(FY2021–2025\) ▾](#)[Reference Year, Target Year, Control Scope ▾](#)[Targets of the Fifth 5-Year Environmental Action Plan ▾](#)[Results of the Fifth 5-Year Environmental Action Plan in FY2022 ▾](#)

The NGK Group formulates five-year action plans for the environment. To achieve the goals of the 5-year targets, we are promoting environmental activities and setting annual targets.

Outline of the Fifth 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 5-year plan aimed at realizing the NGK Group Environmental Vision announced in April 2021, which targets net zero CO₂ 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 Fifth 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 CO₂ has been changed to CO₂ emissions volume from basic unit per net sales. 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 CO₂ emissions by FY2030 compared with the reference year of FY2013 and net zero CO₂ 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 CO₂ 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 CO₂) 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 Fifth 5-Year Environmental Action Plan in FY2022

Below are the targets and results for FY2022, targets for FY2023, and targets for the final year of the current 5-year action plan, in FY2025.

While global economic activity steadily resumed in FY2022, and the economy showed signs of moderate recovery, a fall in demand due to monetary tightening and a global economic downturn became apparent. As a result, shipments from our Environment Business Group were about the same as the previous period. On the other hand, through our expanded efforts to increase renewable energy use since FY2021, we reduced CO₂ emissions by approximately 200,000 metric tons.

As a result, we achieved CO₂ emissions of 560,000 metric tons against the target of 600,000 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 other emissions and water consumption.

Results in FY2022 were as follows.

Category	Item	KPI	FY2022			FY2023 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)	600,000 metric tons (Reduce by 18% from FY2013)	560,000 metric tons (Reduced by 23% from FY2013)	○	560,000 metric tons (Reduce by 23% 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	<ul style="list-style-type: none"> • Scope 3 consolidated disclosure • Expand scope of LCA calculation 	<ul style="list-style-type: none"> • Scope 3 consolidated disclosure • Expand scope of LCA calculation 	○	<ul style="list-style-type: none"> • Scope 3 consolidated disclosure • Expand scope of LCA calculation 	<ul style="list-style-type: none"> • Expand scope of Scope 3 calculation • Life-cycle assessment (LCA) of major products 	
 Initiatives for a recycling-oriented society	Reduce waste emitted from manufacturing	Basic unit per net sales of waste emitted (consolidated)	Reduce by 46% from FY2013	Reduced by 55% from FY2013	○	Reduce by 53% from FY2013	Reduce by 50% from FY2013	  
		Reduction rate against BAU for waste emitted (consolidated)	Reduce by 27% from FY2013	Reduced by 31% from FY2013	○	Reduce by 27% 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	Basic unit per net sales of water consumption FY2019 level (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	Research on Japan and overseas trends	○	Research on Japan and overseas trends	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 (Abashiri Electric Power)	○	Increase registered products	Increase number of CN-related products/services registered	  
	Promote CSR procurement	Plan progress	Specific response to suppliers	Resumed visits to suppliers	○	Roll out visits to suppliers Expand use of SAQ overseas	Ascertain environmental data of suppliers	
 Promotion of environmental communication	Contribute to local communities	Plan progress	Collaboration with EPOC and Alchi Mirai Forum	Collaboration with EPOC and Alchi Mirai Forum	○	Collaboration with EPOC and Alchi Mirai Forum	Continually enhance actions partnering with local communities	 
	Increase environmental awareness	Plan progress	Publicize NGK Group Environmental Vision	Promoted energy conservation in office buildings	○	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

[Results of the Fifth 5-Year Environmental Action Plan in FY2022 \(PDF: 223 KB\)](#)

Sustainability

Initiatives Toward Carbon Neutrality

[Outline and Goals of Efforts to Reduce CO₂ Emissions](#) |
 [Reduction of CO₂ Emissions in Manufacturing Activities](#) |
 [Introduction of Internal Carbon Pricing](#) |
 [Introduction of Renewable Energy](#) |
 [Reduction of CO₂ in Logistics Processes](#) |
 [Calculation of CO₂ Emissions in Life Cycle Assessment](#)

Outline and Goals of Efforts to Reduce CO₂ Emissions

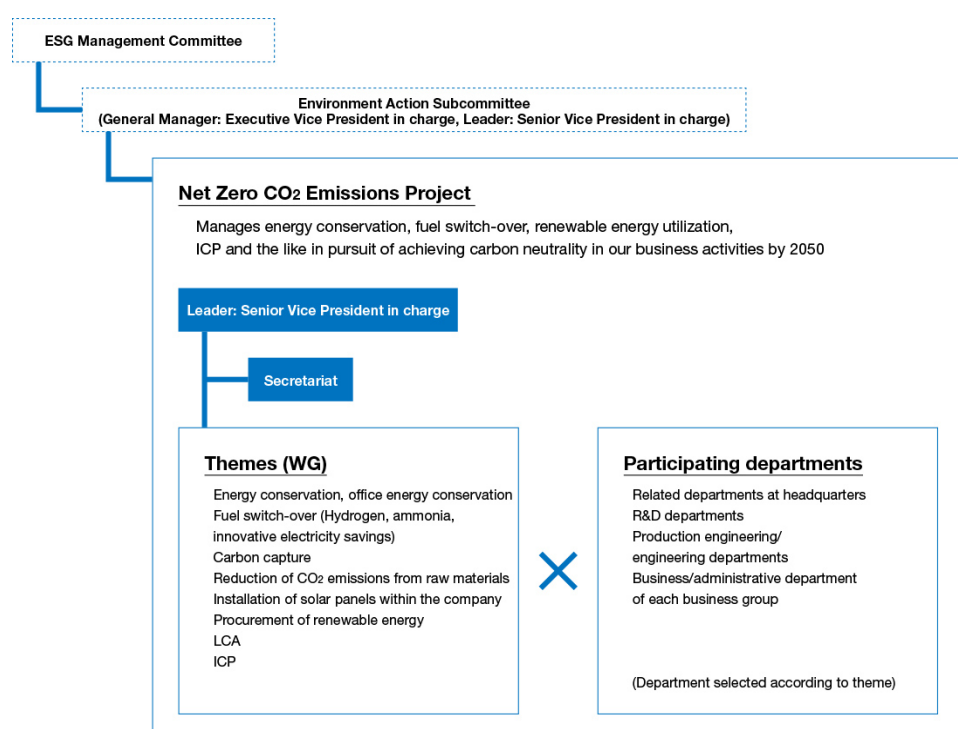
The NGK Group has been making steady progress toward achieving the CO₂ emissions reduction targets of our Fifth 5-Year Environmental Action Plan following the NGK Group Environmental Vision, by creating and implementing annual plans.

NGK has launched and implemented the Net Zero CO₂ Emissions Project as a cross-functional organization in an effort to develop an organization 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. In FY2022, we carried out energy conservation patrols and accelerated investments in environment-related equipment through ICP. To visualize energy consumption, we collected monthly energy data and shared this data on an internal platform.

As a result of our energy conservation efforts, CO₂ emissions were reduced by 15,000 metric tons. Furthermore, thanks to the installation of photovoltaic power generation systems within the NGK Group, the procurement of renewable energy, and switching to carbon neutral LNG*, we achieved our target of bringing down our CO₂ emissions in FY2022 to a total of 560,000 metric tons.

For FY2023, we have set our target CO₂ emissions at 560,000 metric tons. This fiscal year, we expect to see an increase in demand in the environment business as passenger car sales recover and exhaust gas regulations are strengthened which could lead to tens of thousands of tons more emissions. Under such conditions, we aim to keep our emissions below FY2022 levels by further promoting energy saving activities and making improvements through process advancements and waste heat utilization, in addition to the initiatives mentioned above. Meanwhile, we have started ceramic firing tests using hydrogen burner furnaces to promote hydrogen use aimed at further encouraging the technical innovation that can help us achieve our net-zero CO₂ emissions targets from 2030 onwards. In FY2022, we installed a mass production demonstration furnace to further our efforts to commercialize such furnaces. At the same time, we are also planning to test carbon capture and storage (CCS) for capturing the CO₂ we release.

* Carbon neutral LNG is a type of LNG considered to have no CO₂ emissions because the emissions it releases are offset using CO₂ credits.

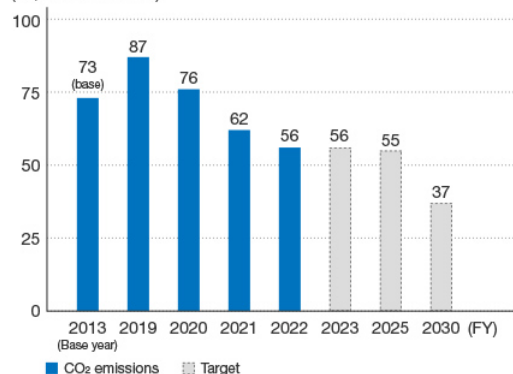
Net Zero CO₂ Emissions Project Promotion Framework

Reduction of CO₂ Emissions in Manufacturing Activities

As we strive to reduce CO₂ emissions of the Group as a whole, we have focused on developing company-wide organizations, sharing of basic unit targets and CO₂ reduction targets, collecting monthly energy data, and visualizing our efforts with the launch of an internal platform, which are steadily showing results. Our main initiatives and their effects are as follows.

CO₂ Emissions (all NGK Group production sites)

(10,000 metric tons)



* 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 CO₂ credits so that it is not considered to generate CO₂ 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.

Main Energy Conservation Activities Aimed at Reducing CO₂ Emissions

Category	Measures	Effects (FY2022)
Top-down enhancement of energy-saving	<ul style="list-style-type: none"> Develop a Group-wide organization for energy conservation led by the general manager of the manufacturing departments Collect monthly energy data and visualize efforts through internal platform commentary 	CO ₂ reduction effect Reduction from energy conservation activities: 15,000 metric tons
Increase efficiency of manufacturing processes	<ul style="list-style-type: none"> Introduction of innovative production processes Facility improvements Operational improvements 	
Energy conservation support for Group companies	<ul style="list-style-type: none"> Created voluntary energy conservation guidelines and best practices brochure and distributed to all production sites Headquarters staff visited Group companies and exchanged views with local staff and energy conservation patrols 	
Energy conservation activities for general equipment	<ul style="list-style-type: none"> Replaced boilers with higher efficiency models Prevented air and steam leaks and rationalized usage Switched to LED lighting Renewed air-conditioning equipment and rationalized air conditioning settings 	

Energy Conservation of General Equipment and Buildings

The NGK Group has been actively promoting energy conservation activities in relation to general equipment, such as lighting, air conditioners, boilers, and compressors. The headquarters plays a central role in this by sharing know-how among different manufacturing locations, thereby achieving more efficient activities. Whenever our buildings are built or altered, we ensure that large-scale energy-saving measures and ZEB principles are incorporated.

(1) Headquarters engineering supporting energy-saving activities at Group companies

The headquarters provides support for energy conservation measures on general equipment (compressors, boilers, air conditioners, etc.) at overseas production sites. These efforts have produced solid results at overseas Group companies, including NGK Adrec, which manufactures fire refractories, and NGK Ceramic Device, which manufactures electronics parts. Our initiatives include 1) energy conservation patrols (identifying leaks or waste and implementing measures) and 2) visualization of data (establishing appropriate values for energy intensity and conducting management). All of these initiatives are conducted jointly with local members and contribute to the increased energy conservation of manufacturing facilities and dramatic reduction in energy costs.

(2) Creating and distributing a printed version of the energy conservation brochure and guidelines

We have created a digital version (Japanese and English) of our energy conservation guidelines and brochure of best practices for distribution within the Group. We also distribute a printed version to each manufacturing site inside and outside of Japan to be kept on hand at worksites for quick reference. This is expected to help enhance voluntary activities and further reduce CO₂ emissions.



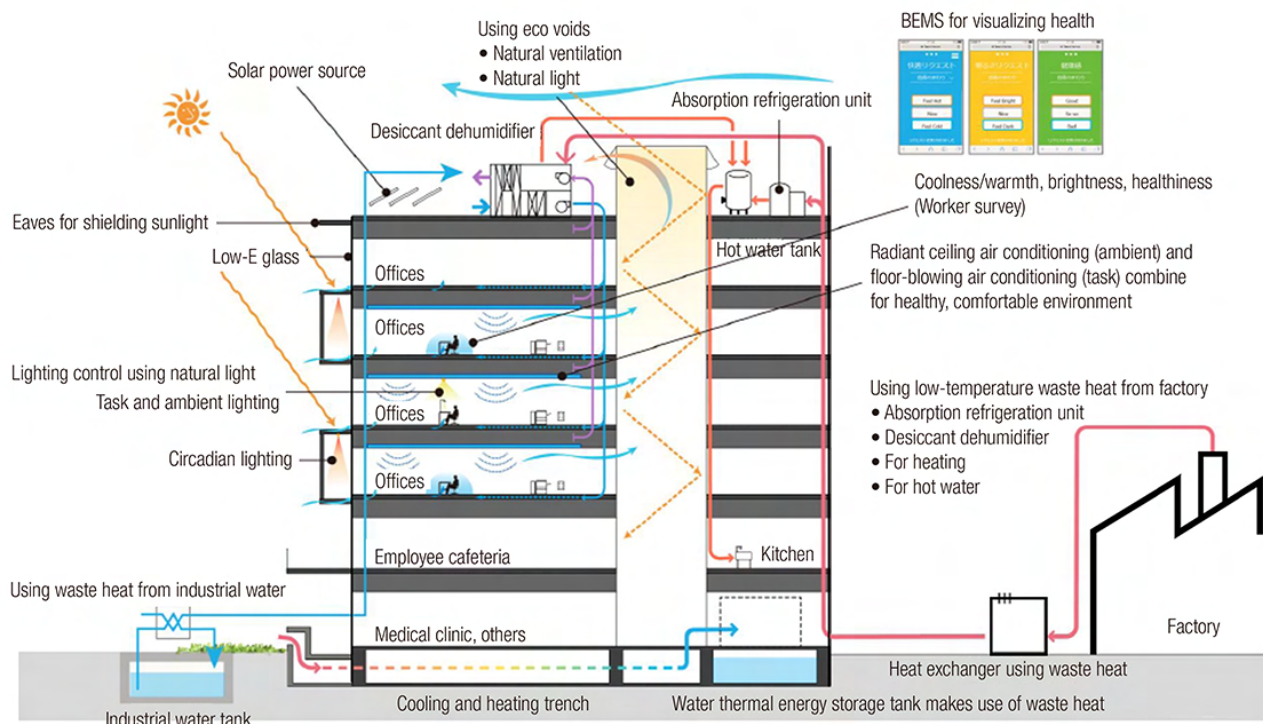
(3) Efforts to conserve energy of buildings

Whenever there is an opportunity to build or renovate a building, we actively endeavor to utilize high-efficiency equipment and introduce renewable energy, and carefully consider each location so as to effectively utilize any natural advantages, such as low-temperature waste heat from our adjacent factories and natural ventilation/lighting, to achieve significant energy savings. Efforts like these allowed the new administration/welfare wing, which was completed in Mizuho, Nagoya in January 2020, to be a zero energy building (ZEB)-oriented office facility whose CO₂ emissions are less than half of the official standard. This construction project has been lauded for its pioneering CO₂ reduction technology, and it was adopted as a Leading Sustainable Building Project (CO₂ Reduction) by Japan's Ministry of Land, Infrastructure, Transport and Tourism. This allowed us to achieve ZEB readiness in FY2022.

We have many more construction and renovation projects lined up as part of our plans to restructure and update old buildings, all of which will include energy saving and ZEB measures.



New administration/welfare wing

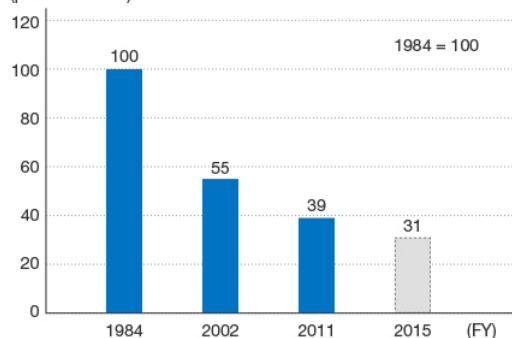


Adoption of Environmentally Friendly Production Processes

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.

Comparison of CO₂ Emissions from Continuous Kilns by Year of Introduction

(per unit of CO₂)



* Change in per unit of CO₂ Emissions from continuous kilns, a typical production facility

Activities by Group Companies

Capturing Greenhouse Gas Sulfur Hexafluoride (NGK Stanger, Energy Support, and Hokuriku Energys)

We collect and recycle gas-filled switches that are disposed of by customers. These units contain sulfur hexafluoride (SF₆) for insulation purposes. As it has a very high global warming potential, the companies collect all SF₆ when disassembling the unit without allowing it to be released into the atmosphere. The total amount of SF₆ recovered in FY2022 was 758 kg, which is the equivalent of approximately 17,000 metric tons of CO₂.



Process Improvement (NGK Ceramics Polska)

Since 2011, NGK Ceramics Polska has been focusing on improving processes for manufacturing SiC-based diesel particulate filters (DPFs), its main product. Target areas include particularly energy-intensive sintering and drying processes, for which we have carried out various measures to reduce CO₂ emissions. To further improve our performance, we will introduce new measures, including technologies provided by the Nagoya Site.



System and Operational Improvements (NGK Metals)

NGK Metals is reducing CO₂ emissions by updating control systems and improving the operation of production equipment. Among these, automating the control units of the oil circulation system for rolling mills had a particularly positive effect. The automation eliminated unnecessary around-the-clock operation, a measure taken to address inefficient activation/deactivation processes, as well as simplified complex manual processing. This change helped reduce electric power consumption as well as CO₂ emissions.



Introduction 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 of US\$130/metric ton-CO₂ 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 CO₂ emissions by 2050. We are also evaluating the possibility of introducing equipment. In FY2023, since the International Energy Agency (IEA) revised the CO₂ price used to set the ICP, we revised our ICP to US\$140/metric ton-CO₂. Going forward, we will pay attention to societal trends and start to consider further application of internal carbon charges.

Introduction of Renewable Energy

We need to expand the use of renewable energy to achieve the goal of net zero in 2050 under the NGK Group Environmental Vision.

Within the NGK Group's internal Net Zero CO₂ Emissions Project, we are systematically promoting installation of photovoltaic power generation systems and procurement of renewable energy while being cognizant of the associated costs.

In FY2021, we procured 100% of electricity from renewable energy sources at all manufacturing sites in Europe (NGK Ceramics Polska, NGK Ceramics Europe, and 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. As for North America, NGK-Locke has switched over to using 100% renewable energy. In FY2022, we erected mega solar power system installations at NCDK's Tajimi plant, and ACC (NGK Ceramics Suzhou Co., Ltd.)

Meanwhile, in Japan, in addition to the purchase of green certificates to offset emissions, three NGK sites (Nagoya, Chita, Komaki) and NGK Ceramic Device headquarters have switched to LNG, which is completely carbon neutral.

The expanded use of renewable energy is equivalent to a CO₂ emissions reduction of 185,000 metric tons compared to the previous year in FY2021, and an additional 10,000 metric tons in FY2022.

Starting in FY2023, we will continue to expand the procurement of renewable energy as well as fully launch the installation of photovoltaic power generation systems. Going forward, we will continue to expand the use of renewable energy.



Membership in RE100

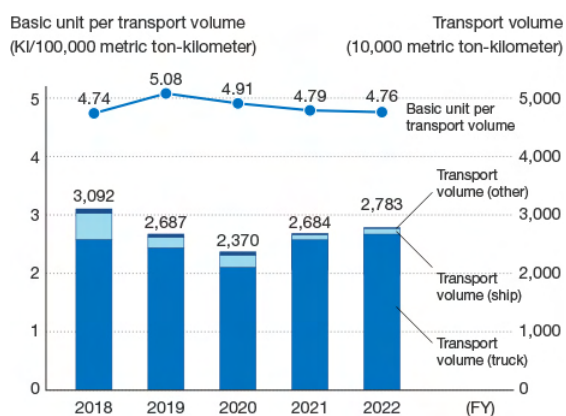
We have joined the RE100 international initiative, which aims to replace 100% of the electricity used in business activities with renewable energy. We aim to get 50% of our electricity from renewable sources by 2025, and have already achieved our goal of 25% by 2022.

Activities toward RE100

We are accelerating initiatives such as procurement of renewable energy and installation of photovoltaic power generation systems within the Group that utilizes large capacity storage batteries called NAS batteries, and Zinc rechargeable battery.

Reduction of CO₂ in Logistics Processes

NGK has worked to reduce CO₂ emissions from logistics with measures including improving loading efficiency and promoting a modal shift. In recent years, the basic unit per transport volume has been deteriorating due to a decline in the volume of goods transported by sea on account of a change in the product mix. In FY2022, we achieved an improvement in CO₂ emissions with a 0.6% reduction year-on-year.



Calculation of CO₂ Emissions in Life Cycle Assessment

Life cycle assessment (LCA) is a quantitative evaluation method for environmental impacts of products and services throughout their lifecycle (raw material extraction-raw material production-product manufacturing-distribution/consumption-disposal/recycling). In order to promote carbon neutrality, it is important to not only ascertain our company's emissions in Scope 1 and Scope 2, but also assess the CO₂ emissions within the supply chain and implement reduction initiatives through working collaboratively with suppliers and customers. On top of Scope 3 calculations relevant to the entire company, the first step of our initiatives should be to understand CO₂ emissions from the LCA of our own products. Expanding Scope 3 calculation range and conducting life cycle assessment of major products are listed as targets in the NGK Group's Fifth Five-Year Environmental Action Plan. In FY2021, we performed calculations of two major products (NAS batteries and HONEYCERAM) based on ISO 14040, and in FY2022 we expanded this to NOx sensors and semiconductor manufacturing equipment ceramics. The calculations for these products not only allow us to identify processes with a lot of CO₂ emissions, but make it possible to perform quantitative comparisons between products. We are considering expanding such calculations to more existing products and applying them to products under development in the future. We will also confirm the calculated LCA, perform analysis, and work to reduce emissions not only within our own company but throughout our entire value chain.

Initiatives for a Recycling-Oriented Society

- Effective Use of Resources ▾
- Reducing Discarded Materials ▾
- Water Resource Conservation ▾
- Approach to a Circular Economy ▾

Effective Use of Resources

The NGK Group is working to increase yield by improving our manufacturing processes, and to curtail waste generation through efforts such as the reuse of raw materials. At the same time, we are focused on promoting resource recycling reducing the final amount externally disposed.

Reducing Discarded Materials

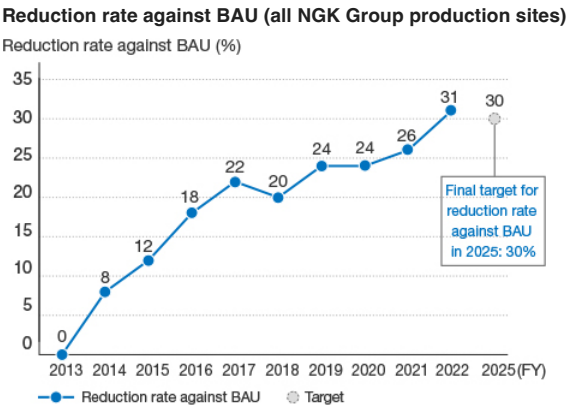
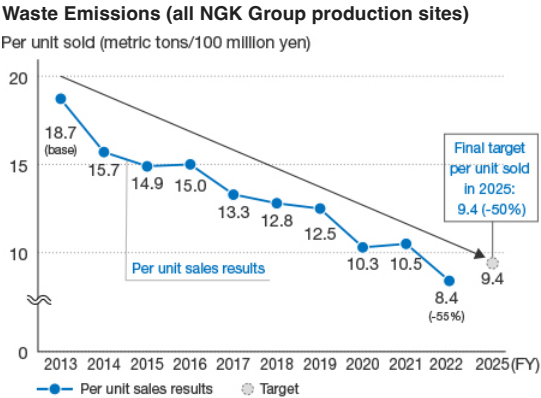
Reducing Discarded Materials in Manufacturing

To meet our 5-year target for reduction of discarded materials, the NGK Group has formulated and is implementing an annual improvement plan, similar to that for CO₂ emissions, aimed at reducing the generation of discarded materials.

We achieved reduction rate of 55% per unit sold in FY2022 compared to FY2013, surpassing our target rate of 46% 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 utilization rate in production sites, as well as reusing resources within processes.

Our reduction rate against BAU, which indicates the improvement per unit manufactured over FY2013, was 31%. So, we have achieved 27% of our target. We have achieved our target of 30% for the final fiscal year, but will continue to carry out activities in order to maintain it.

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.



Recycling Discarded Materials

The NGK Group is striving to promote resource recycling by thoroughly sorting materials and looking for methods to recover resources from discarded materials.

Since FY2017, we have shared methods to recover resources from discarded materials 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 and slurry 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 21 overseas Group companies that are engaged in manufacturing (excluding the three companies for which recycling is difficult).

Water Resource Conservation

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.

Our Fifth 5-Year Environmental Action Plan, which started in FY2021, establishes water consumption per unit sold for the entire NGK Group as a key indicator. We first aimed to maintain the level of 1,000 m³/100 million yen set in FY2019, when there was no decrease in production due to the impact of COVID-19. We achieved this target in FY2022 at 740 m³/100 million yen.

In addition, the unexpected cessation of water withdrawal from the Meiji Irrigation Weir (Toyota, Aichi Prefecture) in May 2022 impacted our Chita Site, prompting us to push to further strengthen risk management with regards to water sources.

In FY2022, there were no violations of standards or regulations related to wastewater quality at any of our domestic or overseas locations.

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.

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) Komaki Plant

The production process for SAW bonded wafers, which are products of our Digital Society Business Group, 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 16,000 m³ of reclaimed water, out of the approximately 160,000 m³ of water used during FY2022. 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

Approach to a Circular Economy

The European Commission announced its Circular Economy Package in 2015. The package signaled a new policy for resource recycling, with requirements such as maintaining the value of products, materials, and resources for as long as possible and minimizing the generation of waste. Since then, the Act on Promotion of Resource Circulation for Plastics came into effect in Japan in April 2022, and in Europe there are new battery regulations that must be complied with. The NGK Group will investigate trends related to a circular economy, and take appropriate action. We will also collect and disclose examples of resource recycling at Group businesses, and consider policies aimed at achieving the recycling-oriented society set out in our NGK Group Environmental Vision by 2050.

Sustainability

Initiatives for Harmony with Nature

Approach to Protecting Biodiversity

As the NGK Group strives toward the realization of a sustainable society, we see our approach to protecting biodiversity as an important issue, and are carrying out the following initiatives.

Efforts to Support Post-2020 Global Biodiversity Framework Targets (Aichi Targets)

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. Our Fifth 5-Year Environmental Action Plan is also 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, and we have begun to take action towards this goal.

In FY2022, we continued to examine domestic and international trends to gain insight into post-2020 state of progress, as well as get an overview of TNFD (Taskforce for Nature-related Financial Disclosures) and SBT-N (Science Based Targets for Nature). For example, we are considering following the LEAP (Locate, Evaluate, Assess, Prepare) approach proposed by the TNFD framework to begin evaluating risks and opportunities. Hereafter, we plan to lay out a roadmap and policies toward 2050.

Encouraging Participation in My Action Declaration

In FY2017 we began promoting participation in the My Action Declaration spearheaded by Keidanren and the Ministry of the Environment. These activities treat biodiversity as something dear to each and every citizen, and their goal is to inspire action to protect biodiversity. The goal was to get 1 million declarations by 2020.

NGK used these activities as an opportunity to raise awareness among employees. We expanded them laterally to NGK Group companies in Japan, and when the activities finished in October 2021, had gathered roughly 6,800 declarations from NGK and all domestic Group companies.

Participating in Related Initiatives

In January 2022, NGK endorsed the Keidanren Declaration on Biodiversity.



Survey of Organisms on Land Owned by NGK

At our recreational facility in the suburbs of Nagoya, we conduct periodic biological surveys of birds, vegetation, and insects in the summer and winter. 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 displayed on-site so that users of the facility will be aware of its biodiversity.



Biological survey

Volunteer Activities by Employees

Each site carries out social contribution activities in cooperation with local governments and NPOs. Some of these activities help to protect biodiversity. For instance, NGK Okhotsk (in Abashiri, Hokkaido Prefecture) cooperates with the Lake Abashiri Mizu-to-Midori-no-kai (Water and Greenery Association), which works to protect the natural habitat of Asian skunk cabbage, by maintaining this habitat. We have carried out these activities every spring and summer since 2009, in an effort to preserve the local environment.

The NGK Ishikawa Plant and NGK Ceramic Device Ishikawa Plant have also teamed up with local resident to clean up the Neagari coastline in Nomi, Ishikawa Prefecture. 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."

Group companies outside Japan are also actively engaging with such initiatives. NGK Electronics Devices Malaysia (in Penang) cooperated with afforestation activities by the Forestry Department Peninsular Malaysia (FDPM) to plant mangroves in the forest reserve in Nibong Tebal, Penang. These activities aim to raise the awareness of employees about the importance of protecting nature and maintaining biodiversity.



Conservation of Asian skunk cabbage habitat
(NGK Okhotsk)



Coastal cleanup
(NGK Ishikawa Plant and NGK Ceramic Device Ishikawa Plant)



Mangrove planting
(NGK Electronics Devices Malaysia)

Sustainability

Environmental / Social Contributions Through Our Products and Services

[Developing and Distributing Products Contributing to Environmental Protection and Services](#) ▾[Contributing to Carbon Neutrality](#) ▾[Preventing Environmental Pollution](#) ▾[Environmental Labeling and Declarations](#) ▾

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 Contributing to Environmental Protection and Services

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. In FY2021, Chubu Electric Power Miraiz, NGK, and the city of Ena jointly established Ena Electric Power in Ena, Gifu, to provide the region with a renewable energy supply service. This was registered as a service contributing to environmental protection related to carbon neutrality. Moreover, in April 2022, we established Abashiri Electric Power, which plans to provide similar services as Ena Electric Power, and registered it as a service contributing to environmental protection as well.

We now offer a lineup of 10 products contributing to environmental protection and services. Four of these products contributing to environmental protection and services 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 CO₂ separation membranes which are expected to contribute to Carbon Capture and Utilization/Carbon Capture and Storage (CCU/CCS).

FY2022 Products Contributing to Environmental Protection

Sales ratio: **59%**

Our Definition of Products Contributing to Environmental Protection and Services

- 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

Contributing to Carbon Neutrality

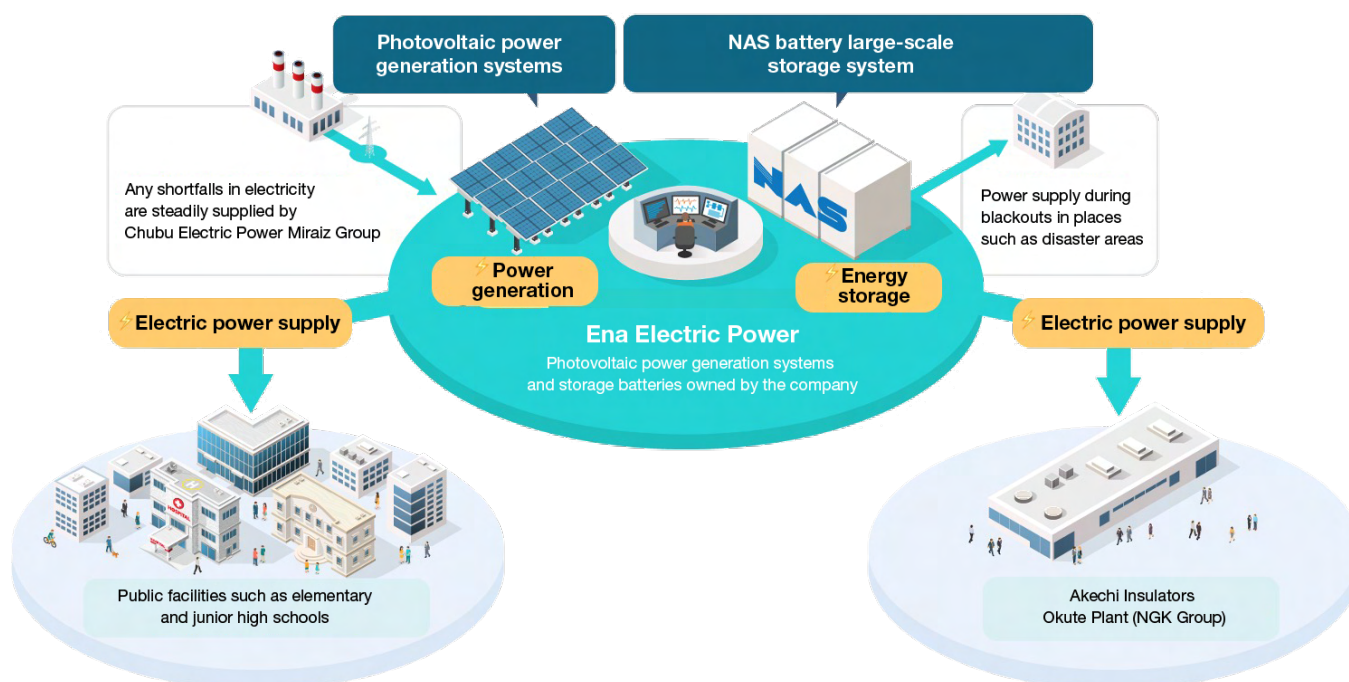
Local Renewable Energy Electric Power Supply Service by Ena Electric Power and Abashiri Electric Power

(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 (CO₂) 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.



Output: **700 MW** Discharge capacity: **4900 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

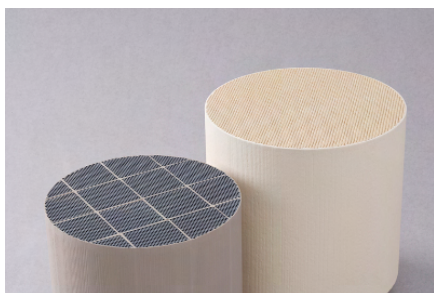
^{*2} Source: OECD Environment Statistics (2012)



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.



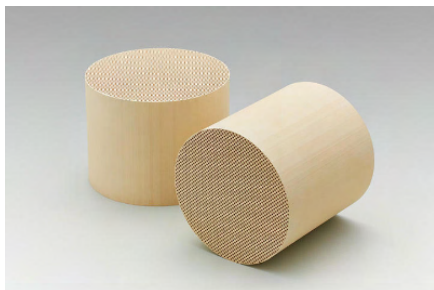
Removes
up to **99**% of PM

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.

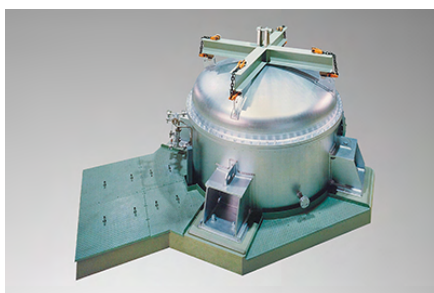


Low-Level Radioactive Waste Treatment Systems

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.

Sustainability

Environmental Education and Communication

[Participating in Local Environmental Education](#) ▾[Employee Environmental Training and Skills Development](#) ▾

Participating in Local Environmental Education

In NGK's Core Policy on the Environment, we have set action guidelines 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 on-site classes at elementary schools, to increase environmental awareness.

Offering Guest Lectures at Elementary Schools and Children's Centers

NGK sends instructors to participate in lectures and workshops for young people that are hosted each year by EPOC (Environmental Partnership Organizing Club)*. Our instructors offer classes on water resources and usage in which children can experience how soil can purify water. So far, a cumulative total of 2,300 people have participated in these guest lectures and other environmental education programs held outside of the company.

Our guest lecture activities were suspended in FY2022 as well in an effort to prevent the spread of COVID-19, but we moved forward with preparations for new lectures.

* EPOC (Environmental Partnership Organizing Club): 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 254 members. (As of April 19, 2023)



Sharing Information with Other Companies

The EPOC subcommittee led by NGK organizes seminars and field trips several times a year under the theme of corporate environmental management (low carbon, resource recycling, biodiversity, water resources, environment-related laws, etc.) and sends out information to members. In FY2022 we held three seminars.

Supporting the “Kagayake Aichi Sustainability Research Institute” Research Team

Following on from FY2020, NGK took part in the “Kagayake Aichi Sustainability Research Institute” project launched by Aichi Prefecture and aimed at university students, who represent the future of Aichi.

This project is being directed by Aichi Governor Hideaki Omura and is focused on achieving sustainable eco-action by globally minded university students on environmental challenges put forward by companies.

In FY2021, 8 companies in Aichi Prefecture took part in this project. The challenge we put forward was to work with NGK in developing a global environmental education program that gets people thinking about a sustainable future. The five-member team of university students who took part in this challenge was proactive about engaging in discussion and collaboration with NGK employees, even in the face of severe restrictions on face-to-face meetings, plant tours, and other interactions due to the COVID-19 pandemic. And they went on to claim the award for excellence.



Employee Environmental Training and Skills Development

Environmental Education inside the Company

We conduct position-based training related to environmental management systems to familiarize employees with the aims and content of our environmental policies. We also provide specialized environmental training courses for personnel who will be directly involved in environmental management, as well as special environmental training for the entire workforce. We conduct training related to ESG when employees join the company, are appointed to a new role, or are promoted into managerial positions. This ensures they are aware of the issues to be addressed by each position, and provides guidance on how to make the most of their work.

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 5,600 people have attended lectures since they began in October 2022.

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, 2023 (NGK)

Pollution Control Managers			Qualified Energy Managers	Special Controlled Industrial Waste Managers	Waste Disposal Facility Technical Managers
Air	Water	Noise/Vibration			
99	118	26	25	22	11

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 855 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 the company's three sites in Nagoya, Komaki and Chita, and the Ishikawa Plant, the system was newly 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), 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 Ide of Nomi City, Ishikawa Prefecture with NGK employees

Environmental Management System

[Environmental Management System](#) | [Environmental Risk Management](#)

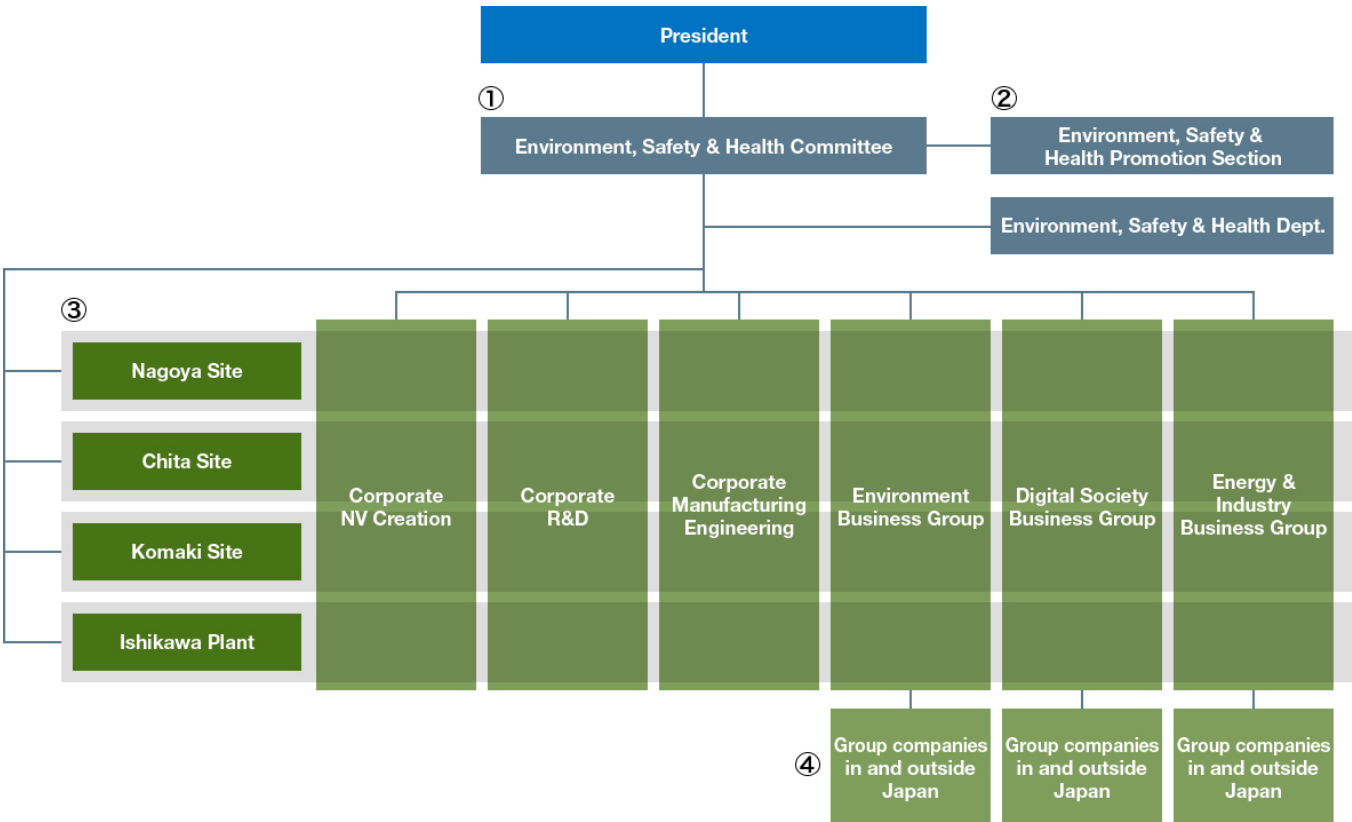
Environmental Management System

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

Environmental Management 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



(1) 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 Environment, Industrial Safety & Health Dept.
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 Environment, Industrial Safety & Health Dept.; 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

(2) Environment, Safety & Health Promotion Section

Governing Structure

Committee Chair	General Manager of Environment, Industrial Safety & Health Dept.
Vice Chair	General Manager of Construction & Maintenance Dept.
Members	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 Planning Dept., Corporate NV Creation; others designated by the Committee Chair

(3) 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.

(4) 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's Core Policy on the Environment. The NGK headquarters surveys environmental performance at Group companies and conducts audits to monitor their conformance to environmental laws. 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.

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's Core Policy on the Environment. 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 2023

Category		Number of manufacturing sites	Number of sites certified
NGK		4	4
Domestic Group Company	Environment Business Group	1	1
	Digital Society Business Group	9	9
	Energy & Industry Business Group	9	9
Overseas Group Company	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

NGK conducts internal audits and external audits (surveillance) of the environmental management system at the Nagoya, Chita, and Komaki sites, as well as the Ishikawa Plant. Each Group company also conducts these same internal and external audits of their environmental management systems.

In FY2022, there were no significant findings. In the event of a significant finding, the relevant department and Environment, Industrial 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. Moreover, in FY2022, there were no major violations of environment-related laws, and no fines related to legal violations, etc.

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 FY2022, 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 FY2022

		Air	Water	Noise/Vibration	Chemical substances
Environmental patrols	Nagoya	4	1	4	2
Emergency response drills		4	2	-	2
Environmental patrols	Chita	1	2	1	1
Emergency response drills		6	4	-	-
Environmental patrols	Komaki	1	2	1	1
Emergency response drills		7	15	-	-
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.

Sustainability

Pollution Prevention

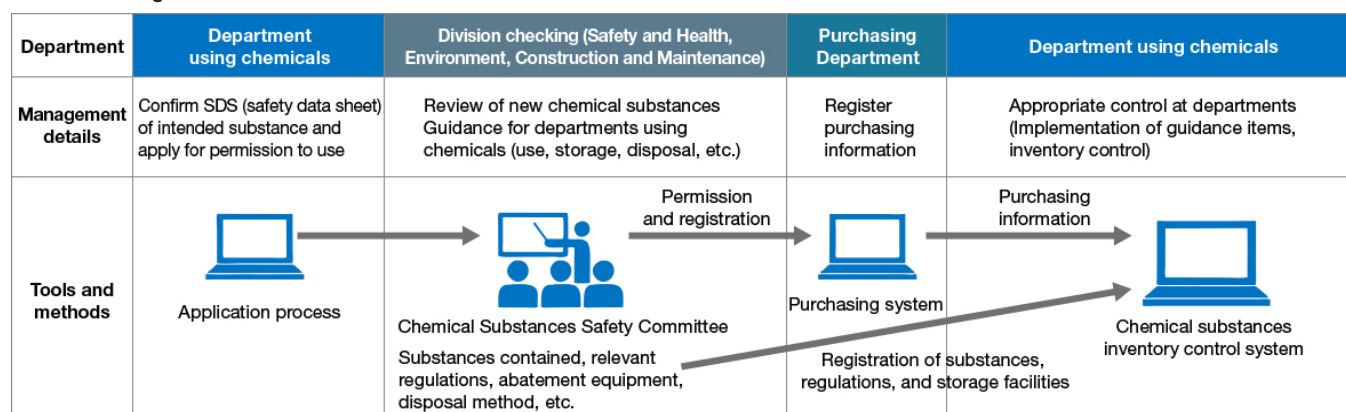
[Chemical Management](#) ▾[Atmospheric Emissions Control](#) ▾[Wastewater Management](#) ▾

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 our [Guidelines for Environmental Action](#). 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's Supply-Chain CSR Guideline](#) and [NGK Group's Green Procurement Standard](#).

Atmospheric Emissions Control

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, we register with Aichi Prefecture as a cooperative factory and conduct measures to reduce emissions.

Wastewater Management

We have set our own internal standards with respect to wastewater which 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 standards.

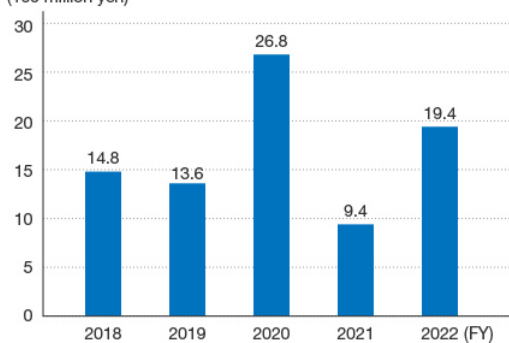
Sustainability

Environmental Accounting

The NGK Group discloses our environmental accounting results in accordance with guidelines published by the Ministry of the Environment. We tally the environmental conservation costs (capital investment, expenses), economic benefits, and cost effectiveness for NGK and our Group companies in Japan, and manage information on the environmental efficiency of CO₂ and discarded materials as indicators.

(1) Capital Investment (NGK and Group companies in Japan)

(100 million yen)

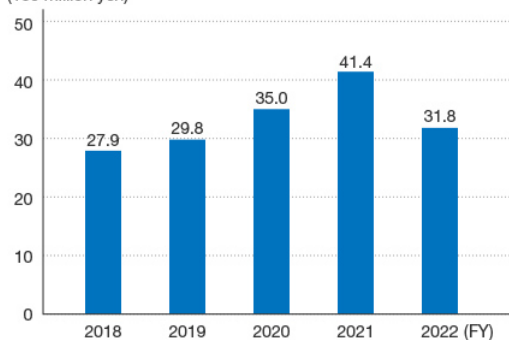
**FY2022 Capital investment Breakdown**

(100 million yen)

Pollution prevention	Global environment	Resource recycling	Upstream/downstream	Administration	Research & development	Social activity	Environmental remediation	Total
11.7	7.0	0.4	0.0	0.0	0.4	0.0	-	19.4

(2) Expenditures(NGK and Group companies in Japan)

(100 million yen)

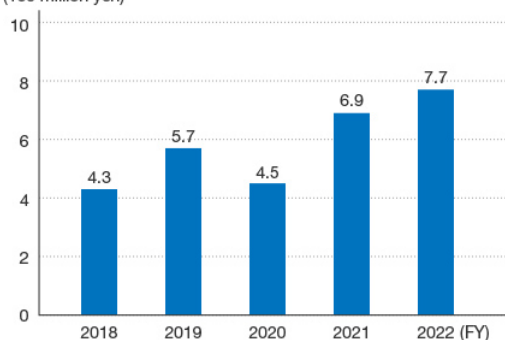
**FY2022 Expenditures Breakdown**

(100 million yen)

Pollution prevention	Global environment	Resource recycling	Upstream/downstream	Administration	Research & development	Social activity	Environmental remediation	Total
8.3	4.3	7.8	0.1	5.2	1.7	2.3	2.1	31.8

(3) Economic Benefits(NGK and Group companies in Japan)

(100 million yen)

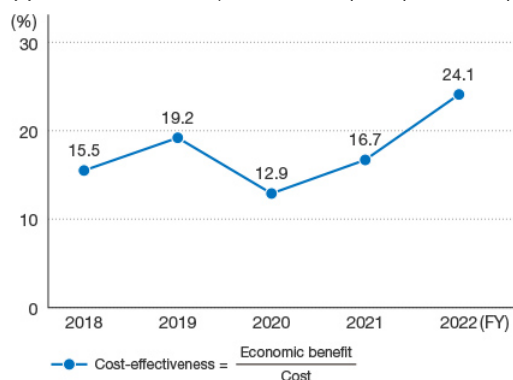


FY2022 Economic Benefits Breakdown

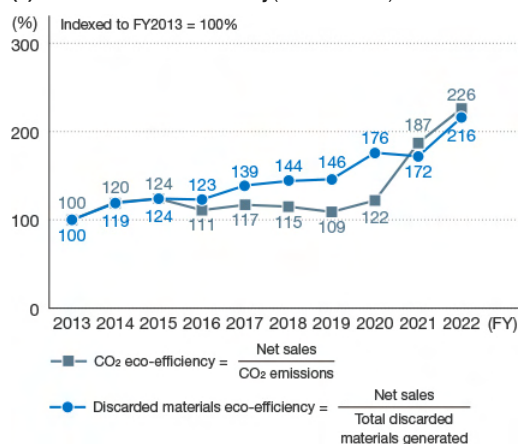
(100 million yen)

Energy savings	Resource conservation (water)	Resource conservation (raw materials)	Resource conservation (packaging)	Discarded materials (disposal decrease)	Discarded materials (gain on sale)	Total
3.0	0.0	0.1	0.0	1.7	2.8	7.7

(4) Cost-Effectiveness(NGK and Group companies in Japan)



(5) Environmental Efficiency(consolidated)



* Note: The above charts do not include data for NGK Electronics Devices, Inc. and some other manufacturing subsidiaries prior to FY2015.

Sustainability

Information Disclosure Based on TCFD Recommendations

[Governance](#) ▾[Risk Management](#) ▾[Strategy](#) ▾[Metrics and Targets](#) ▾

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.



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 (1,306 companies and organizations as of April 28, 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 CO₂ 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 CO₂ emissions reduction by adding achievement benchmarks to the performance-linked bonus evaluation criteria for directors and executive officers.

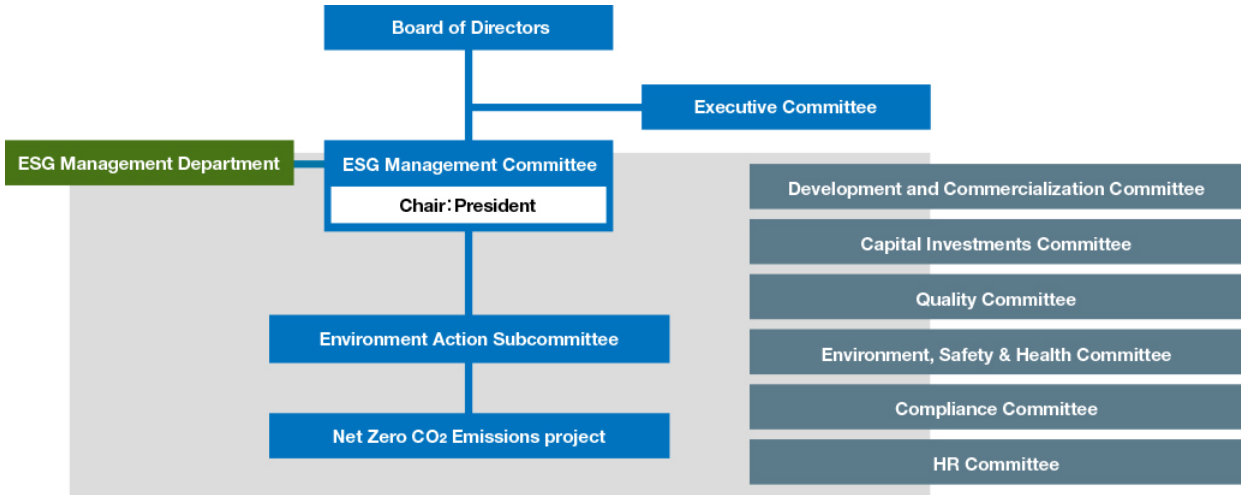
Members from relevant divisions participate in Environmental Action Subcommittee within the ESG Management Committee to evaluate measures for information disclosure based on TCFD recommendations. The subcommittee's results are then deliberated by the ESG Management Committee before being reported to 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 risk 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 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 Corporate Planning Office may decide to convene a response committee, which includes participation by the Company president, to address said risks.

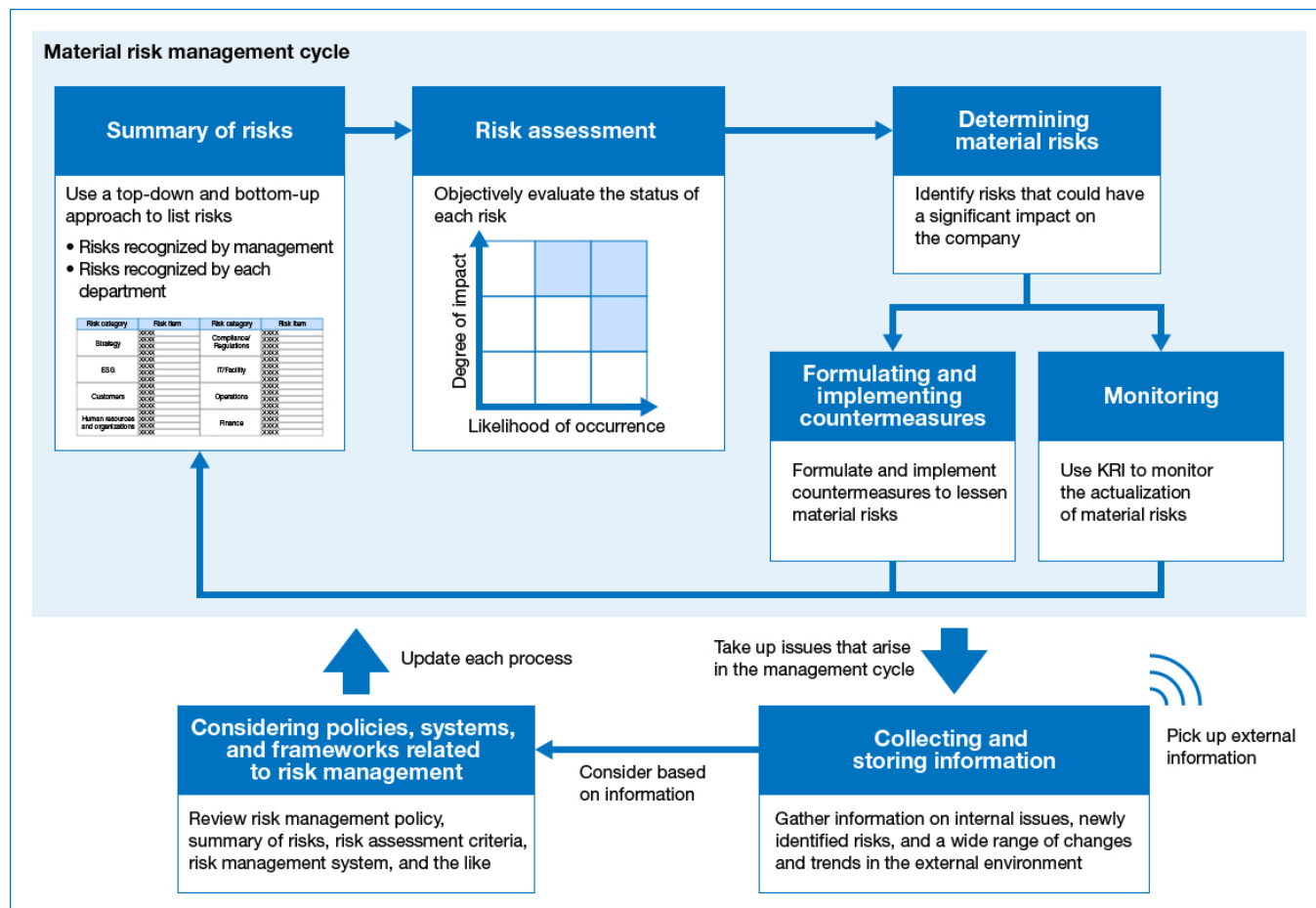
Risk Management Framework



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 material 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.

Risk Identification Process



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

(1) 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

(2) Scenarios

We have set 1.5°C and 4°C 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°C Scenarios	Rapid changes in policy, regulatory systems, and markets to aim for carbon neutral by 2050 and limit the average global temperature increase to 1.5°C compared to pre-industrial revolution temperatures.	<ul style="list-style-type: none"> International Energy Association (IEA) Net Zero by 2050 scenario SSP1-2.6 scenario, etc.
4°C Scenarios	Lack of progress in government policy, regulatory systems, or social initiatives result in an average global temperature increase of 4°C compared to pre-industrial revolution temperatures. Massive impact from disasters and other events caused by climate change.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Rapid reduction in emissions required to achieve carbon neutral by 2050. Adoption of carbon pricing against CO₂ 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	<ul style="list-style-type: none"> 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: - ¥5.6 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. Rapid growth in CO ₂ capture volume in various sectors, including fuel production, power generation, and industry.	Risks and opportunities associated with battery technology innovation and the emergence /adoption of new technology	Opportunities <ul style="list-style-type: none"> Increased competitiveness by advancing proprietary technology development Increased storage battery needs 	Medium- to long-term	<ul style="list-style-type: none"> Monitoring of trends in technology innovation R&D advancement 	We are currently carrying out qualitative studies due to the lack of quantitative indicators.
		Market growth driven by widespread adoption of CCU/CCS (CO ₂ capture, utilization, and storage)	Risks Competitiveness of our technologies will decline as competitors advance proprietary technology development Opportunities Growth in CCU/CCS market will increase business opportunities for our ceramic products (subnano-ceramic membranes, etc.)			
Market	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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: + ¥0 bil 2030: + ¥65 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 <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 CO₂ 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 \(PDF: 98 KB\)](#)

- > Subnano-ceramic membranes
- > Gallium Nitride (GaN) Wafer
- > DCB and AMB 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 CO₂ emissions. We will mitigate these risks by promoting initiatives aimed at net-zero CO₂ 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](#)

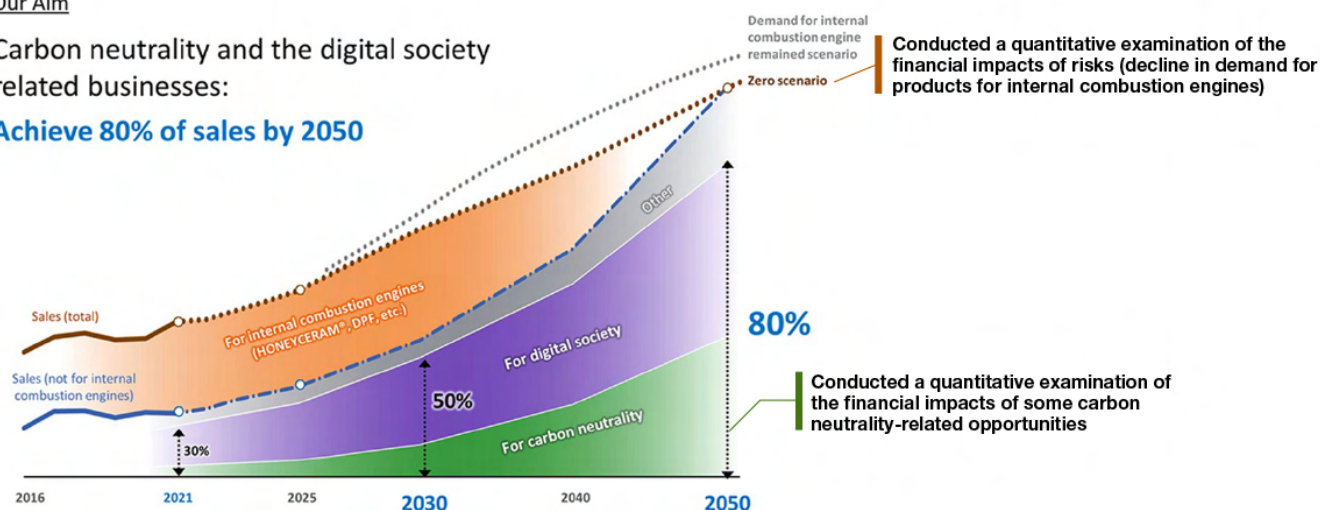
[> Carbon Neutrality Strategic Roadmap](#)

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.

Our Aim

Carbon neutrality and the digital society related businesses:

Achieve 80% of sales by 2050

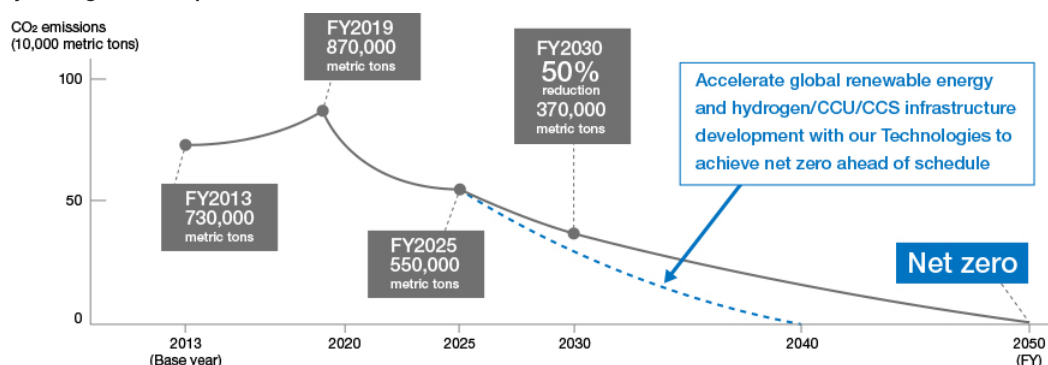


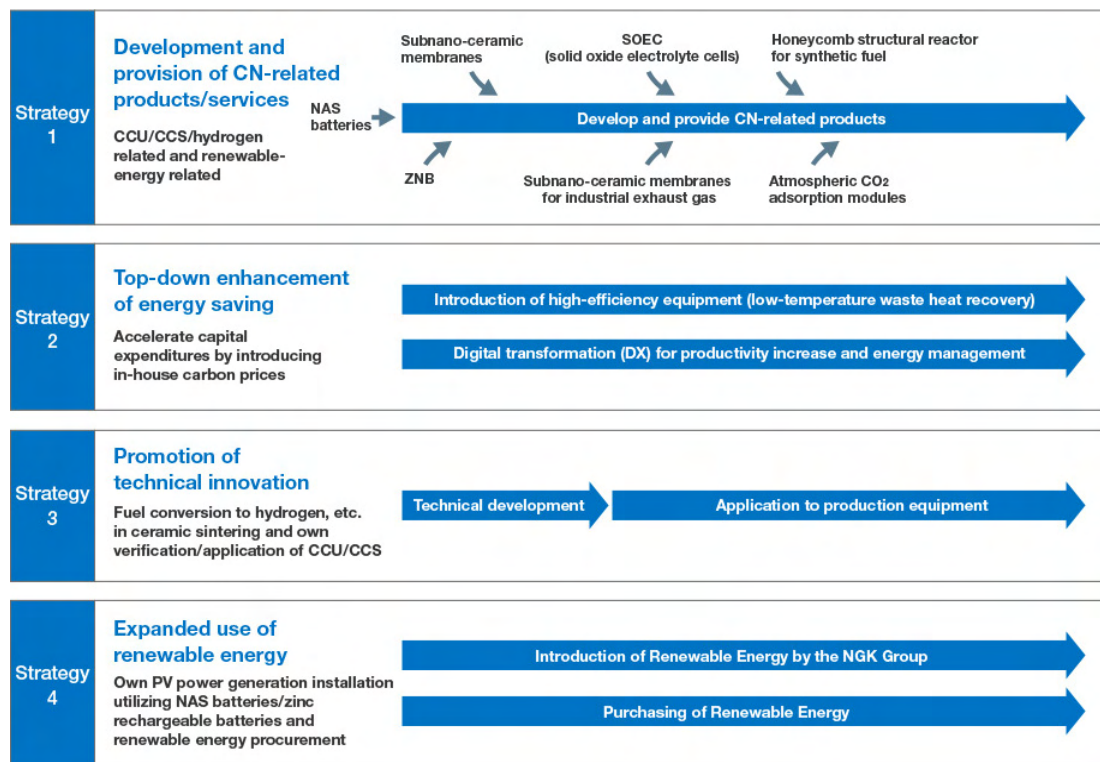
We intend to suitably enhance and deepen our scenario analysis by adding and updating various parameters and external reference scenarios depending on the state of new product development. And we will continue analyzing and considering responses to the impacts that the risks and opportunities posed by 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 CO₂ 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.

[> Fifth 5-Year Environmental Action Plan](#)[> CO₂ emissions Scope 1 · 2](#)[> CO₂ emissions Scope 3](#)

(Disclosed in May 2023)

Environmental Data Collection

Material Balance

Category	Substance	FY2018		FY2019		FY2020		FY2021		FY2022		Unit
		Consolidated	Non-consolidated	Consolidated	Non-consolidated	Consolidated	Non-consolidated	Consolidated	Non-consolidated	Consolidated	Non-consolidated	
INPUT	Electric power	0.93	0.25	0.95	0.25	0.88	0.22	0.98	0.23	0.94	0.23	TWh
	Gas ^{*1}	1.72	0.24	1.65	0.23	1.41	0.20	1.66	0.19	1.50	0.20	TWh
	Petroleum ^{*1}	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	TWh
	Raw materials	18	3	15	3	14	3	16	2	15	3	10 ⁴ metric tons
	Recycled materials	0	0	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	10 ⁴ metric tons
	PRTR-listed substances	694	219	589	236	506	188	447	186	511	160	Metric tons
	Water withdrawal	4.53	1.60	4.33	1.55	3.78	1.45	4.37	1.41	4.14	1.20	Million m ³
OUTPUT	Energy-origin CO ₂	87	16	87	16	76	13	63	12	59 (59) <input checked="" type="checkbox"/>	13 <input checked="" type="checkbox"/>	10 ⁴ metric tons of CO ₂
	Energy-origin CO ₂ (including effects of CN LNG) ^{*2}	—	—	—	—	—	—	62	10	56	10	10 ⁴ metric tons of CO ₂
	Other greenhouse gases	1	0	1	0	0	0	0	0	0	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 ₂ O	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	120	0	68	0	83	0	77	1	107	1	Metric tons
	PRTR-listed substances (emissions into atmosphere)	128	3	76	3	89	3	84	2	110	2	Metric tons
	Discarded materials	6	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	2	0	1	0	1	0	1	0	1	0	10 ⁴ metric tons
	Water discharge	2.81	1.37	3.14	1.40	2.53	1.09	2.74	1.03	2.68	0.80	Million m ³
	PRTR-listed substances (discharge into bodies of water)	0	0	1	1	0	0	1	1	1	1	Metric tons
	Scope 1 (energy-origin CO ₂)	32	4	31	4	26	4	31	4	28 (28) <input checked="" type="checkbox"/>	4 <input checked="" type="checkbox"/>	10 ⁴ metric tons of CO ₂
	Scope 1 (energy-origin CO ₂) (including effects of CN LNG) ^{*2}	—	—	—	—	—	—	29	2	25	1	10 ⁴ metric tons of CO ₂
	Scope 2 (energy-origin CO ₂)	55	12	56	11	49	10	33	9	31 (31) <input checked="" type="checkbox"/>	9 <input checked="" type="checkbox"/>	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 CO₂ (including effects of CN LNG) and Scope 2 (energy-origin CO₂), has been changed from a fixed value to the actual value from the power company for each fiscal year, beginning in FY2020.

*1 Using "TWh" as the unit, we have changed the figures for FY2018 to FY2021 to compare the figures with electric power.

*2 CN LNG (Carbon Neutral Liquid Natural Gas) is LNG that is offset with CO₂ credits, and thus considered to have no CO₂ 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 Amount obtained by converting the consumption volume for each type of fuel into the heat value = Σ (consumption volume of each fuel \times unit heating value of each fuel) <Unit heating value of fuel> Natural gas: 43.5 MJ/Nm ³ , but in China from FY2021: 38.9 MJ/Nm ³ , City gas: 45.0 MJ/Nm ³ , but from FY2021 city gas other than for NGK alone: 44.8 MJ/Nm ³ , LPG: 50.8 MJ/kg, LNG: 54.6 MJ/kg
		Gas	
		Petroleum	Amount obtained by converting the consumption volume for each type of fuel into the heat value = Σ (Consumption volume of each fuel \times Unit heating value of each fuel) <Unit heating value of fuel> Light oil: 37.7 MJ/L, Heavy oil A: 39.1 MJ/L, Kerosene: 36.7 MJ/L, Gasoline: 34.6 MJ/L
	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 \times CO ₂ conversion factor of each type of energy) <CO ₂ conversion factor of energy> (Unit of electric power factor) kgCO ₂ /kWh (Unit of fuel factor) kgCO ₂ /fuel unit 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* Belgium, France: AIB value Australia: Australian National Greenhouse Accounts value, Poland: AIB value / Poland National Centre for Emission Management* value, China: IEA value / Ministry of Ecology and Environment of the Republic of China value*, IEA values for other countries Natural gas in China (Nm ³) 2.22/2.16*, Natural gas outside China (Nm ³) 2.22, City gas for NGK alone (Nm ³) 2.24/2.29*, City gas other than for NGK alone (Nm ³) 2.23, LPG (kg) 3.00, LNG (kg) 2.70, Light oil (L) 2.58, Heavy oil A (L) 2.71, Kerosene (L) 2.49, Gasoline (L) 2.32, Industrial steam (MJ) 0.06 *Data to left of "/" is for FY2018 to FY2020, data to right is from FY2021	
	6. Emission volume of other greenhouse gases	Emission volume of other greenhouse gases (tCO ₂) = volume of activity \times emission coefficient \times Global warming potential <Global warming potential> CO ₂ : 1, CH ₄ : 25, N ₂ O: 298, HFC: differs depending on type, PFC: differs depending on type, SF ₆ : 22800, NF ₃ : 17200	
	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	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
GHG emissions (Scope1+2: Energy-origin CO ₂) ^{*1}	—	Including effects of CN LNG ^{*2}	87	87	76	62	56	10 ⁴ metric tons of CO ₂
GHG emissions (Scope 1: Energy-origin CO ₂) ^{*1}	—	Including effects of CN LNG ^{*2}	32	31	26	29	25	10 ⁴ metric tons of CO ₂
GHG emissions (Scope 2: Energy-origin CO ₂) ^{*1}	—	—	55	56	49	33	31	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}	187	198	167	120	100	Metric tons of CO ₂ per 100 million yen
GHG emissions (Scope3) (FY2018-FY2020: Non-consolidated, FY2021-FY2022: Consolidated)	Total		104.7	97.7	89.3	344.9	351.9	10 ⁴ metric tons of CO ₂
	1	Purchased products and services	86.3	84.2	77.0	178.8	192.2	10 ⁴ metric tons of CO ₂
	2	Capital goods (capital investment)	15.2	9.9	9.0	13.4	13.9	10 ⁴ metric tons of CO ₂
	3	Energy	1.8	1.6	1.5	8.6	8.2	10 ⁴ metric tons of CO ₂
	4	Transport (upstream)	0.8	1.4	1.3	18.8	11.1	10 ⁴ metric tons of CO ₂
	5	Waste	0.3	0.2	0.2	1.2	1.0	10 ⁴ metric tons of CO ₂
	6	Business trips	0.1	0.1	0.1	0.3	0.3	10 ⁴ metric tons of CO ₂
	7	Employee commutes	0.2	0.2	0.2	0.9	0.9	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	10 ⁴ metric tons of CO ₂
	12	Disposal of sold products	—	—	—	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	0	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 ₂ O	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 CO₂ credits, and thus considered to have no CO₂ 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	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Electric power	0.93	0.95	0.88	0.98	0.94	TWh
Gas*	1.72	1.65	1.41	1.66	1.50	TWh
Petroleum*	0.02	0.02	0.02	0.02	0.02	TWh
Basic unit per net sales	577	596	513	522	442	MWh per 100 million yen

The scope is consolidated.

*Using "TWh" as the unit, we have changed the figure for FY2018 to FY2021 due to the basic unit calculation.

Conservation of Water Resources

Item		FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Water withdrawal	Tap water/industrial water	3.910	3.710	3.135	3.720	3.494	Million m ³
	Groundwater	0.620	0.620	0.640	0.614	0.648	Million m ³
	Rainwater	0.002	0.001	0.002	0.002	0.001	Million m ³
	Total	4.532	4.331	3.777	4.336	4.143	Million m ³
Water discharge	Rivers	0.767	0.828	0.734	0.733	0.705	Million m ³
	Lakes	0.000	0.000	0.000	0.000	0.000	Million m ³
	Sea	1.330	1.618	1.201	1.218	1.152	Million m ³
	Sewerage	0.382	0.419	0.376	0.458	0.507	Million m ³
	Factory complex processing	0.319	0.241	0.207	0.238	0.233	Million m ³
	Other	0.012	0.013	0.017	0.057	0.079	Million m ³
	Total	2.810	3.140	2.534	2.704	2.677	Million m ³
Amount of water consumption		1.722	1.191	1.243	1.632	1.466	Million m ³
Volume recycled		0.090	0.090	0.066	0.063	0.077	Million m ³
Recycling rate*		2.0	2.0	1.7	1.5	1.9	%

The scope is consolidated.

*(Recycling rate) = (Volume recycled) / (Total water withdrawal)

Raw Materials

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Raw materials	18	15	14	16	15	10 ⁴ metric tons
Recycled materials	0.4	0.4	0.4	0.4	0.5	10 ⁴ metric tons

The scope is consolidated.

Chemical Management System

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
VOC	120	68	83	77	107	Metric tons
PRTR-listed substances (emissions into atmosphere)	128	76	89	84	110	Metric tons

The scope is consolidated.

Discarded Materials

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Discarded materials	6	5	5	5	5	10 ⁴ metric tons
Recycled	4	4	4	4	4	10 ⁴ metric tons
Disposed of externally	2	1	1	1	1	10 ⁴ metric tons
Basic unit per net sales	12.8	12.5	10.3	10.5	8.4	Metric tons per 100 million yen
Reduction rate against BAU*	20	24	24	26	31	%
Water discharge	2.810	3.140	2.534	2.704	2.677	Million m ³
PRTR-listed substances (discharge into bodies of water)	0	1	0	1	1	Metric tons

The scope is consolidated.

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

Products and Services Contributing to Environmental Protection

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Ratio of sales of products and services contributing to environmental protection of the sales of all products and services	52	59	57	59	59	%

The scope is consolidated.

Environmental Accounting

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Environmental conservation costs/Capital investment ^{*1}	14.8	13.6	26.8	9.4	19.4	100 million yen
Environmental conservation costs/Expenditures ^{*1}	27.9	29.8	35.0	41.4	31.8	100 million yen
Economic benefits ^{*1}	4.3	5.7	4.5	6.9	7.7	100 million yen
Cost-effectiveness ^{*1 *2}	15.5	19.2	12.9	16.7	24.1	%
CO ₂ eco-efficiency ^{*3 *4 *5}	115	109	122	187	226	%
Discarded materials eco-efficiency ^{*3 *4 *6}	144	146	176	172	216	%

*1 The scope is NGK and domestic group companies

*2 (Cost-effectiveness) = (Economic benefits) / (Expenditures)

*3 The scope is consolidated.

*4 FY2013 = 100%

*5 (CO₂ eco-efficiency) = (Net sales) / (CO₂ emissions)

*6 (Discarded materials eco-efficiency) = (Net sales) / (Amount of discarded materials)

Environmental Management System

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
NGK	4	4	4	4	4	Number of bases certified
Domestic Group	20	22	18	19	19	Number of bases certified
Overseas Group	20	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	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Significant findings	0	0	0	0	0	Cases

Environmental Risk Management

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Major violations	0	0	0	0	0	Cases

External Recognition of Environmental Performance

Item	FY2018	FY2019	FY2020	FY2021	FY2022
CDP-Climate Change	B	A-	B	B	A-
CDP-Water Security	B-	B-	B	B	A-
CDP-Supplier Engagement	B	B	B	A	A-

Eco Test Certification

Item	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of successful examinees	90	37	73	44	29	Persons

Sustainability

Respect for Human Rights

[Basic Approach ▾](#)[Related Policies and Approaches ▾](#)[Management System ▾](#)[FY2022 Activities ▾](#)[Human Rights Due Diligence ▾](#)[Grievance Mechanisms ▾](#)[Education Concerning 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 our [Supply-Chain CSR Guideline](#)^{PDF}. 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 the company, but accelerates our efforts to respect human rights.

[NGK Group Human Rights Policy](#)


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.

Supply-Chain CSR Guidelines

The NGK Group expects all our suppliers to comply with our human rights policy in terms of respect for human rights in our supply chains. We ask them to thoroughly implement the policy using the NGK Group's Supply-Chain CSR Guidelines. The guidelines give clear guidance on the following matters: respect for basic human rights and abolishment of discrimination, prohibition on forced labor, prohibition on child labor, wages, working hours, safety and hygiene, dialogs and discussions with employees, and responsible resource and material procurement.

We ask all our suppliers to submit a form consenting to compliance with the guidelines once a year. We also ask suppliers to consent to complying with the guidelines when starting new transactions.

We have published the NGK Group's Supply-Chain CSR Guidelines on our website in Japanese, English and Chinese.

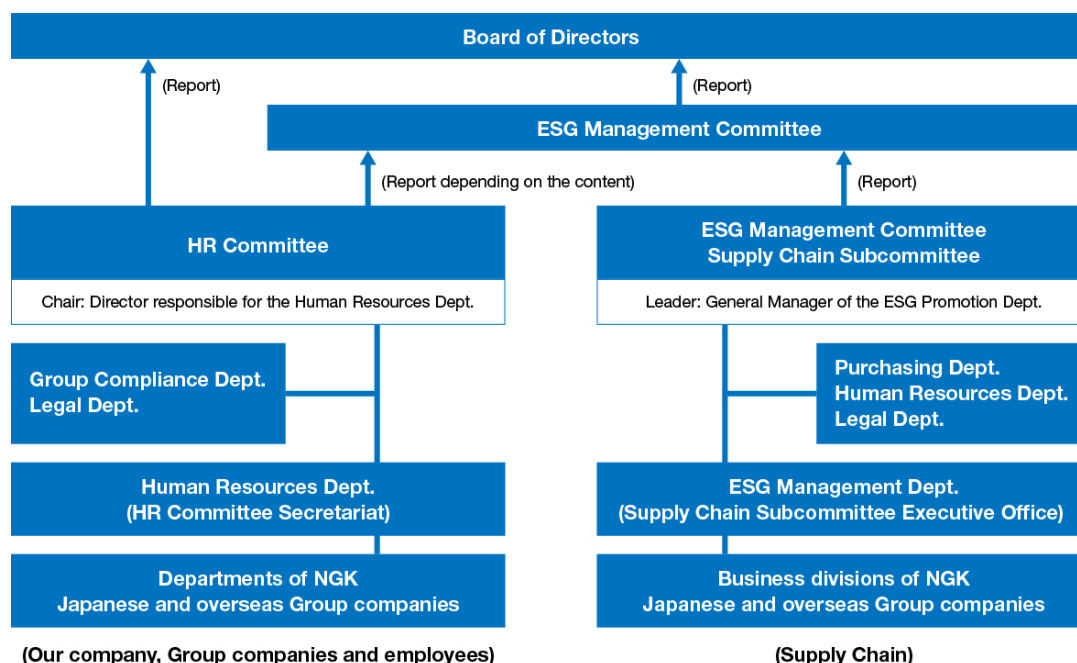
[> Supply Chain Management](#)
[NGK Group's Supply-Chain CSR Guideline \(PDF:141KB\)](#)

Management System

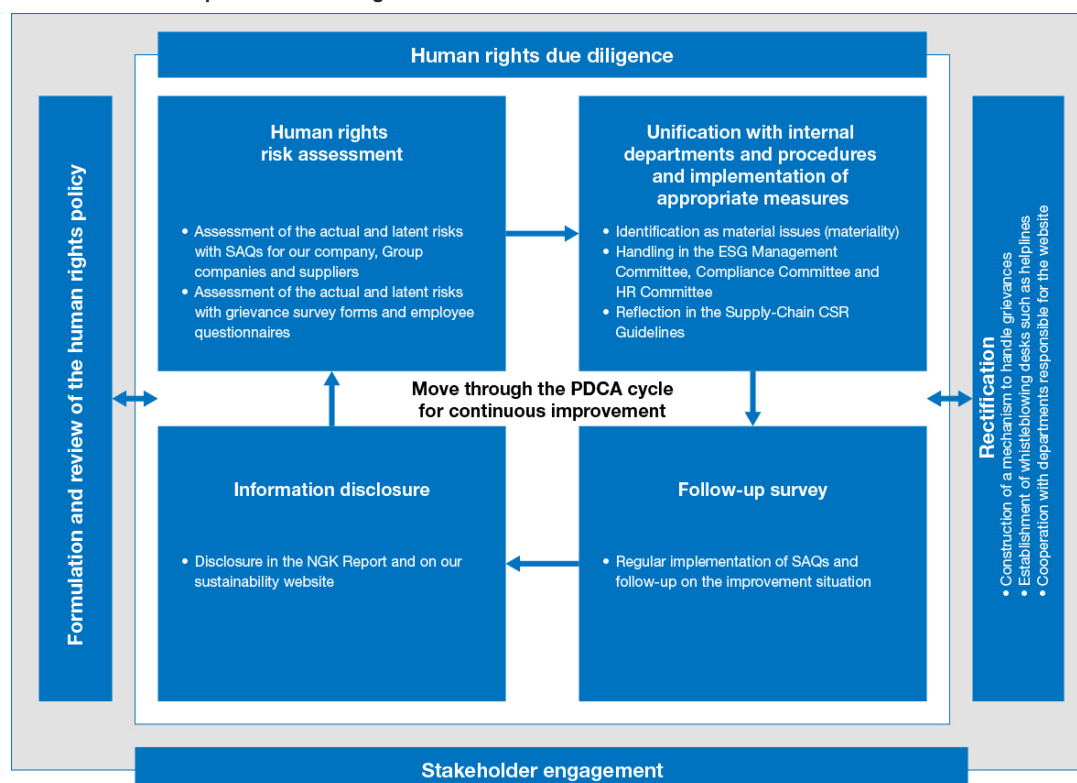
In April 2020, we established the HR Committee as a cross-sectoral, deliberative body chaired by the director responsible for the Human Resources Department and tasked with ensuring that corporate activities have a stronger focus on human rights and that important personnel issues are addressed by the NGK Group as a whole.

The HR committee coordinates and cooperates with related committees and departments on initiatives for ensuring respect for human rights, according to their content and importance. At the same time, 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 oversees the status of implementation.

Organizational Structure Chart



Overall Picture of Initiatives for Respect for Human Rights



FY2022 Activities

In FY2022, we focused on the following human rights initiatives.

Implementation Timing	Details of Implementation
(Ongoing from FY2021)	Conducting human rights due diligence surveys (SAQs) for Japanese and overseas suppliers of NGK headquarters
April to June	Conducted a human rights due diligence survey (SAQ) on suppliers of Group companies in Japan
April to June	Investigated human rights related grievances in all Group companies in and outside Japan in the second half of FY2021 (human rights related grievance of NGK headquarters are handled as the occasion demands)
June	Provided the “Business and Human Rights: Initiatives for Respecting Human Rights” e-learning program
September	Disclosed Statement on the UK Modern Slavery Act (fiscal year ended March 31, 2022)
October to November	Conducted investigations into human rights-related grievances at Group companies in and outside Japan during the first half of FY2022 (human rights related grievances at NGK headquarters are investigated and recorded on a case by case basis)
December 2022 to February 2023	Conducted a human rights due diligence survey (SAQ) of NGK headquarters, and all Group companies in and outside Japan

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 FY2022, a total of 43 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 FY2022, we received 28 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 submit a written agreement to comply with our Supply-Chain CSR Guidelines. Moreover, in FY2022, we newly conducted a self-assessment survey to ascertain the level of understanding of, and status of activities related to, CSR procurement at approximately 630 suppliers of our Group companies in Japan.

[📎 NGK Group's Supply-Chain CSR Guidelines \(PDF:141KB\)](#)

[> Supplier Assessment](#)

Based on the above results, the NGK Group recognizes that the following are human rights issues requiring our attention. We are now considering our response to them.

Human Rights Issues Requiring Our Attention

- 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 overseas Group companies. 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.

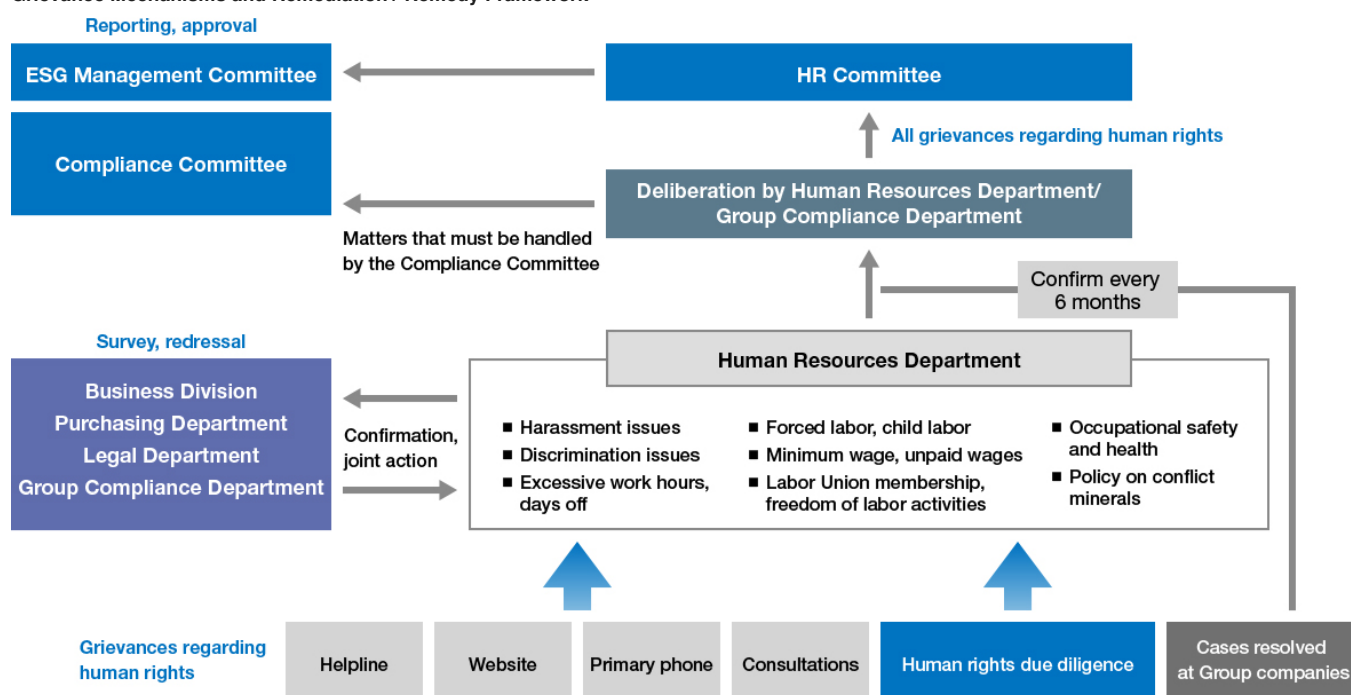
[> Whistleblowing system](#)

[> 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: Initiatives for Respecting Human Rights” e-learning program Corporate responsibility to respect human rights, human rights related risks, NGK Group Human Rights Policy and internal initiatives	<ul style="list-style-type: none"> • All officers and employees working in NGK (including contract employees, re-hired employees, re-contracted employees, temporary employees, subcontractors, employees seconded from Group companies and part-time employees) • Employees seconded from NGK working in Japanese Group companies and overseas Group companies 	Viewed: 12,207 views Questionnaire respondents: 3,846	June 2022
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	115	December 2022
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	433	November 2022 to March 2023
LGBT	“Introduction to LGBT: Aiming for a Worker-friendly Workplace” Basic LGBT knowledge and internal initiatives	New employees	139	April 2022
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	572	April 2022 to March 2023
Harassment	Compliance, workplace bullying and sexual harassment in manufacturing sites	New section chief training	11	July to December 2022
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	519	October 2022 to March 2023

Sustainability

Supply Chain Management

[Basic Approach](#) ▾[Supply Chain Management Promotion Framework](#) ▾[Supplier Assessment](#) ▾[Communication Activities with Procurement Partners](#) ▾[Procuring Resources and Raw Materials Responsibly](#) ▾

Basic Approach

Our basic policy centers on the three principles of open and fair, partnership, and relationship with society. In line with this, the NGK Group has established a Basic Purchasing Policy to promote fair and honest business transactions and help ensure prosperous relationships with the suppliers in our supply chain. 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.

Basic Purchasing Policy >



Supply Chain Management Promotion Framework

At NGK, the Purchasing Department is responsible for managing tier 1 suppliers. It also manages suppliers in tier 2 and beyond who provide critical items such as raw materials. We manage approximately 800 suppliers in line with NGK's Supplier Management Regulations.

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. In FY2022, we were able to save approximately 380 million yen through cost reductions.

In FY2023, we expanded the scope of this review to the outsourcing of highly specialized work, and are working to further strengthen management and purchasing.

Promoting CSR Procurement

The NGK Group promotes CSR procurement as a response to rising social expectations for CSR-oriented supply chain management. We preferentially select CSR-conscious companies as suppliers and purchase CSR-sensitive raw-materials and services.



Supply-Chain CSR Guideline


The NGK Group created the NGK Group's Supply-Chain CSR Guideline in FY2010 as a guide to promote CSR procurement across the Group.

The Guideline specifically describes our obligations as a socially responsible buyer as well as our requirements for socially responsible suppliers, such as specifying environmental obligations like greenhouse gas emissions reductions.

In 2013, the Guideline was expanded by being integrated with the previous Green Procurement Guideline, which sets forth rules for preferential purchase of environmentally friendly products and services. Thereafter, they were revised based on changes in social conditions and new global challenges. New points of compliance are being added as well.

Every year we ask all suppliers to submit a written agreement to comply with this guideline, and when we start working with a new supplier, we ask them to comply with the guideline.

The Supply-Chain CSR Guideline is publicly available on our website in multiple languages (Japanese, English, and Chinese).

 [NGK Group's Supply-Chain CSR Guideline](#)
(PDF : 141KB)



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 2023, 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 our Basic Purchasing Policy of “Open, fair, and honest procurement” and “Pursuit of competition principles and profitability.” 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 Supply-Chain CSR Guidelines which includes ESG elements to be a requirement for selection as a new supplier.

Existing Supplier Assessment

At NGK, every year we ask existing suppliers to submit written consent to comply with our Supply-Chain CSR Guidelines. 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 are first conducting these surveys for direct suppliers of NGK. Next, we plan to gradually expand them to the main suppliers of our Group companies in Japan, and then to the main suppliers of our Group companies overseas in FY2023.

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

Because of the risks posed by the COVID-19 pandemic, NGK's annual earnings presentation for suppliers was conducted online, just as it was last year. We explained our earnings and materials procurement policy to 175 supplier companies. 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.

Ongoing Operation of the Supplier Helpline

In 2008, NGK established the supplier helpline system. Upon receiving consultation via e-mail, fax, and telephone, we make an effort to respond with solutions quickly.

[> 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 FY2022, we visited existing suppliers, with due consideration given to the COVID-19 pandemic. We also conducted audits at 43 of our main raw materials suppliers in-line with our evaluation plan.

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 FY2022 meeting was attended by 61 people from 55 conference member companies. The keynote address was on the topic of on-site work risks (fall risk).

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.

* Minerals including tin, tantalum, tungsten, and gold produced in the Democratic Republic of the Congo and surrounding countries, and used as a source of funding for armed conflict in the area.

Sustainability

Pursuing Quality

[Basic Approach ▾](#) |
 [Quality Activity System ▾](#) |
 [Quality Risk Management ▾](#) |
 [Quality Activities at Production Bases Outside Japan ▾](#) |
 [QuiC Activities to Improve Quality with Full Employee Participation ▾](#) |
 [Strengthening Quality-Related Education ▾](#) |
 [Raising the Level of Maintenance Activities ▾](#)

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

Quality Policy



Quality Objectives FY2023

A focus on Organizational Self Discipline is required to improve our "Quality of Operation".

Results of Initiatives in FY2022

NGK has been implementing quality of operation^{*1} improvement initiatives since FY2018.

Since FY2021, we have taken efforts to have each person in the workplace strive autonomously to improve the quality of their work. In FY2022 we strove to prevent unreasonable or ambiguous work and ensure thorough communication. As a result, we revised workloads and work rules, promoted understanding and awareness of compliance by workplace and Group companies, and are building an organizational culture in which problems are shared openly.

^{*} 1 Quality of operation: Level of operational systems that are in place to ensure that promises made to customers are fulfilled.

Initiatives Planned for FY2023

In FY2023 we continue to promote department-led activities so that all members of the NGK Group can refine the quality of operation. To that end, we will maintain the same quality objectives as last year, and work to enhance the autonomy of these activities.

Concerning product quality, we continue to promote QRE-P^{*2} in our efforts to eliminate quality risks in the market. In particular, we continue to focus on activities that were attempted in FY2022, in which departments analyze the cause of quality issues and strive to improve work process and then instill these in their own activities.

^{*} 2 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.

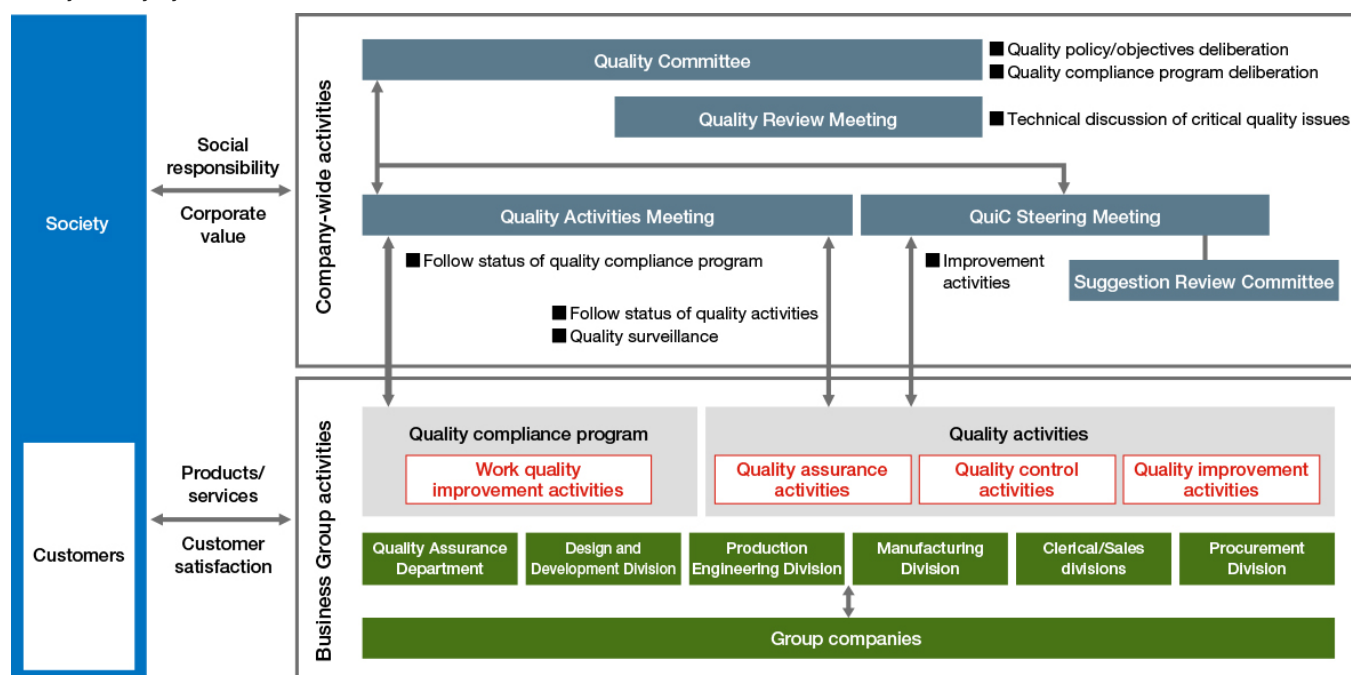
Quality Activity System

The NGK Group quality activity system consists of a company-wide system, led by the Quality Committee Chair, 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.

In FY2022, as part of QRE-P, we attempted activities in which departments analyze the cause of quality issues and improve their work processes. We then made operational rules for them to implement when quality issues occur. Our improvements aim to create a work process that will lead to fundamental improvements by having departments in which quality issues occur improve the way they carry out their work.

Quality Activity System



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 ISO9001 or IATF 16949 certification.

Acquisition of ISO 9001 or IATF 16949 Certification

[> Social Data Collection](#)

Quality Risk Management

Four 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 Quality Management Department head 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 products or markets. Manufacturing defects and customer complaints are shared company-wide every month through reports to the Quality Management Department, and the appropriateness of countermeasures is discussed.

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.

Seeking Greater Effectiveness from Quality Activities and Innovation in Operational Procedures

We have been promoting QRE-P activities throughout the NGK Group. Through these activities, we can identify procedural innovations in product realization 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 system 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 FY2022, we focused on weaknesses in the work processes in each department and continued efforts to incorporate the QRE-P concept into each department's work processes, which began in FY2020. To this end we made rules in which the department analyzes what parts of the work process were lacking and improves their work processes by themselves instead of merely implementing technical countermeasures when problems occurred in the market. In addition, we began to expand QRE-P activities mainly within Group companies in Japan that carry out product and process design to strengthen our rollout of QRE-P activities to Group companies.

In FY2023, with the aim of more effectively and efficiently eliminating quality risks in development projects, we will join departments in considering quality risks in accordance with QRE-P from an early stage in development as we work to improve reliability at commercialization. Also, in order to further promote QRE-P activities at Group companies, we plan to consider rolling out QRE-P activities to Group companies outside Japan as well.

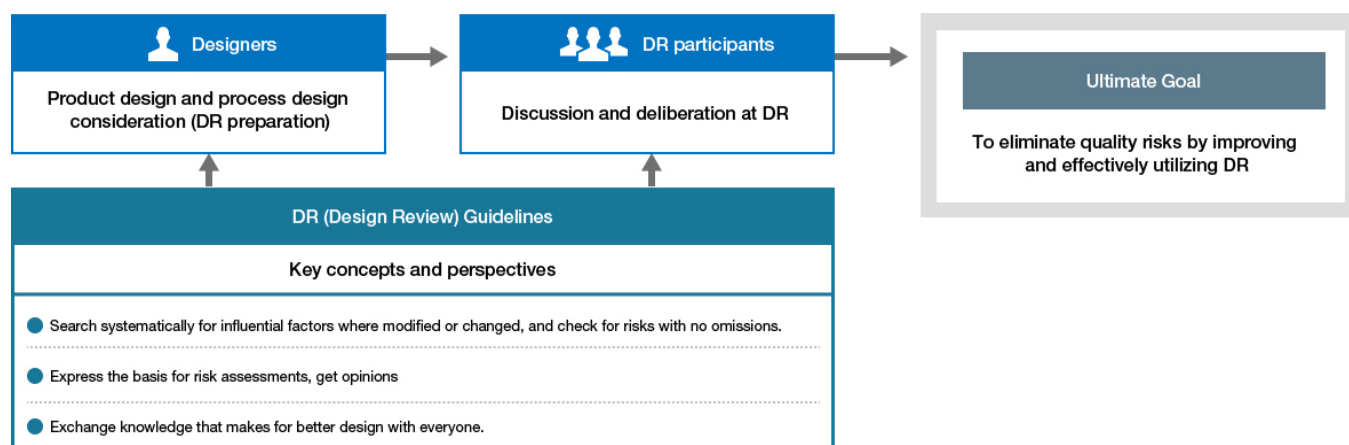
Activities to Strengthen DR Functions

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.



Quality Activities at Production Bases 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

[> Social Data Collection](#)

QuiC Activities to Improve Quality with Full Employee Participation

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 production; 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.

In July of FY2022, 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 third time to hold the event.

In FY2023, two events will be held; one is a company-wide contest focused on sharing manufacturing department best practices in July, and another is an NGK-BOX/Surprising Challenges! event to share innovations and best practices implemented within the NGK Group in October.

Suggestion Activity Participation Rate

	FY2020	FY2021	FY2022
Manufacturing Department	93%	82%	89%
Non-manufacturing Department	83%	71%	76%
Clerical Department	50%	25%	27%
Number of suggestions	Approx. 19,000	Approx. 16,400	Approx. 15,600



Company-wide QuiC Activities Contest



NGK-BOX/Surprising Challenges! best practices presentation held online



Sending Award Recipients and Outstanding Proposal Commendation Recipients to Training in and outside Japan

Training at a Group Companies Outside Japan

Normally, Outstanding Proposal Commendation recipients and Grand Prize recipients visit Group companies outside Japan at the end of October through early November. However, in FY2022, as in FY2021, this overseas visit was canceled due to the COVID-19 pandemic.

We intend to resume these best practice overseas promotion activities once the COVID-19 pandemic has been contained.

Training in Japan

For the first time in three years, we held domestic training that had been cancelled since FY2020 due to the effects of the COVID-19 pandemic. From December 7 through 10, 16 Outstanding Proposal Commendation recipients and QuiC Excellence Award and Special Award recipients 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.



Attending Nationwide QC Circle Conference during training in Japan

Strengthening Quality-Related Education

The NGK Group aims to provide customers with product 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.

We place the greatest emphasis on practical training tied directly to each employee's job duties and Quality Management System (QMS) training aimed at promoting systemic improvement in operations. So, we conduct long-term individual training which lasts for six months. Due to the continuing COVID-19 pandemic, the following training was able to be provided via online delivery and video streaming, COVID-safe classroom instruction, or some combination thereof.

Quality-Related Education in FY2022

Training name	Number of participants	Objectives and key characteristics
Problem Solving Training (young NGK employees)	Lecture: 67 participants Individual instruction: 32 participants	<ul style="list-style-type: none"> Skills development support for statistical analysis skills on the theme of operational challenges Support in conjunction with participants' supervisor
SQC (Statistical Quality Control) Methods Training (those interested/including NGK Group)	A total of 356 participants	<ul style="list-style-type: none"> Learn statistical quality control methods Changed traditional face-to-face sessions to e-learning for each method Comprised a total of 15 lectures, with a lecture added for frequently asked about methods All lectures were available to attend at any time
Reliability Basics Training (those interested/including NGK Group)	Reliability Basics Training 1: 103 participants	<ul style="list-style-type: none"> Learn about design reliability, the physics of failure, and methods of analyzing reliability data
	Reliability Basics Training 2: 80 participants	<ul style="list-style-type: none"> Learn methods of prevention, QFD, FTA, FMEA, and Design Review (DR) 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 (those interested/including NGK Group)	Lecture for directors and general managers: Approx. 150 participants Lecture for practitioners: Approx. 200 participants Guidance and consultation: 20 participants	<ul style="list-style-type: none"> Understand the concept of the study of failure and the benefits of using it Improve analytical and developmental skills through lectures and seminars

Training name	Number of participants	Objectives and key characteristics
QMS Training (those interested/including NGK Group)	ISO/IATF standards interpretation: 594 participants	<ul style="list-style-type: none"> Understand the intent and requirements of standards Session demand accommodated via face-to-face + online (simultaneous streaming) sessions
	ISO/IATF Internal Quality Auditor training: 129 participants	<ul style="list-style-type: none"> Internal quality auditor training and accreditation
	VDA 6.3 Process Auditing Seminar: 41 participants	<ul style="list-style-type: none"> 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

Company name	No. of Level 1 examinees	No. of employees who passed Level 1 (pass rate)	No. of Level 2 examinees	No. 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%)	-	-

Sustainability

Pursuing Product Safety

[Basic Approach](#) ▾[Activity System](#) ▾[Risk Assessment](#) ▾[Communicating with Customers](#) ▾[Employee Training and Education](#) ▾

Basic Approach

The NGK Group pursues product safety through product quality maintenance activities that follow our quality policy based on the NGK Group Corporate Business Principles.

> [NGK Group Corporate Business Principles](#)

> [Pursuing Quality](#)

> [Policies and Guidelines](#)

Activity System

NGK's Quality Activity System consists of a Group-wide system led by the Quality Committee Chair, 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.

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.

- Our Corporate rule for quality activities stipulate conformance with six quality items. One of these is Safety, for which we have clarified which items and methods should be checked. We are introducing and expanding this concept and method through QRE-P Activities*¹. The work process also ensures the Quality Assurance Review Meeting discusses the status of risk assessments being carried out for products in development.
- Products 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 product safety 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 Quality Management Department participates in DR*² to confirm/support the risk evaluations from each department.
- This activity system ensures that in the event of an emergency related to product safety, or when a particular incident is recognized, 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 our Group 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. 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's Supply-Chain CSR Guidelines stipulate that we will implement initiatives together with our suppliers which include product safety. 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](#)

[> Guidelines for Environmental Action](#)

[> Procurement Information](#)

[📎 NGK Group's Supply-Chain CSR Guidelines \(PDF: 141 KB\)](#)

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 company, and at every stage in their advancement. Our company-wide training includes content related to product safety. Specifically, we provide training on IATF 16949/ISO 9000, as well as study sessions on product safety with regards to Product Liability Act.

Please refer to our [FY2023 Company-Wide Education Scheme](#) for more information on company-wide training.

Sustainability

Improving Customer Satisfaction

[Basic Approach](#) ▾[Customer Satisfaction Survey](#) ▾

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 that 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

2018	2019	2020	2021	2022
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 47% of total sales.

Sustainability

Human Capital Management

[Basic Approach](#) ▾[Promotion Structure](#) ▾

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 corporate value and growth.

We formulated the NGK Group Human Capital Management Policy, Human Resource Development Policy and Workplace Development Policy in June 2023 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 our company.

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.

Sustainability

Human Resources Management

[Basic Approach](#) ▾[Fair Treatment and Evaluation](#) ▾[Communication with Employees](#) ▾

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 from age-based evaluation to effort- and result-based evaluation

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.

Communication with Employees**Employee Engagement**

Once every two years NGK carries out an engagement survey.

For the survey carried out in FY2022, a total of 4,805 people took part (men: 4,212; women: 593). 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. Also, the average score was higher than that from the previous survey conducted in FY2020.

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, 2022, 4,014 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 FY2022

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

Sustainability

Work-Life Balance

[Approach to Work-Life Balance ▾](#)[Activities for Promoting Work-Life Balance ▾](#)[Enhancing Systems for Supporting Work-Life Balance ▾](#)

Approach to 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

Activities for Promoting Work-Life Balance

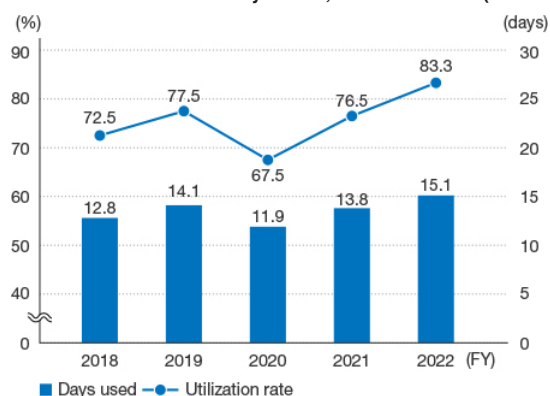
Initiatives to Shorten Total Hours Worked

> [Health Management: Initiatives to Shorten Total Hours Worked](#)

Initiatives to Promote Use of Paid Leave

In FY2022, 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.

Enhancing Systems for Supporting 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 via a shortened working hour system. 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

In 2010, NGK made a major revision to its human resource system, and we have since been continuously enhancing our support measures by identifying employees' needs.

In FY2017, we established an early reinstatement lump-sum system for employees who return to work early from their long-term childcare leave (until the day on which their child reaches 11 months old) after taking maternity leave. We also established a non-registered daycare subsidy system to help subsidize employees who put their children in non-registered daycares. These systems are part of the initiatives we undertake to support employees' careers after they have returned to work. Also, in addition to childcare and nursing care, we launched a system for flexible work arrangements to help employees who need to attend to a health condition of their own that requires repeated and ongoing treatment, thereby finding a balance between work and medical care.

In FY2018, we investigated how to improve the efficiency and productivity of workplaces by offering employees greater flexibility in terms of work style and environment, so that they can work to their potential while maintaining a healthy work-life balance, regardless of when or where they work. It was in this context that we considered and expanded our use of telecommuting. Then, in FY2020, we formally introduced a telecommuting system to boost productivity and help address the needs of employees with children or other commitments.

In FY2019, we introduced postpartum support leave for male employees. We have made it possible for employees to use accumulated leave (expired annual paid leave from the past fiscal year) to take from one day off. Employees can also use it to take non-consecutive days off. The number of male employees taking childcare leave has increased compared to before the introduction of this system. In FY2022, we worked to establish a workplace environment where our employees can take childcare leave even more flexibly.

We have enhanced special paid leave for when a spouse gives birth from two days to five days. We give 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. We have also established a point of contact for consultations relating to work-life balance to reduce anxieties among employees. We held a talk on the theme of "Promoting the Take-up of Childcare Leave by Male Employees in NGK" for managers (FY2021). We shared the key points on the revisions to the Child Care and Family Care Leave Act and the changes to the operation of the system to all employees. We have made it obligatory to hold an interview using the "Request Sheet for Scheduled Childcare Leave" with employees who are pregnant and employees who have stated their spouse is pregnant or has given birth.

In FY2022, about 90% of male employees* took childcare leave through these initiatives.

* 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, 2022 to March 31, 2023)

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

		Interview (employee, supervisor, and HR)		Interview (employee, supervisor, and HR)	
		During pregnancy	Before/after birth	During childcare leave	Balancing work and care
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
	Health Insurance		Lump-sum birth allowance		
	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 Childrearing Support Measures and Users

Systems beyond Legal Requirements

System Name	Details of the System	Category		FY2018	FY2019	FY2020	FY2021	FY2022
Childcare leave	Until the day on which the employee's child 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 accumulated leave (expired paid leave from the previous fiscal year).	Number of childcare leave takers	Total	48	40	64	79	157
			Male	23	19	35	56	127
			Female	25	21	29	23	30
		Return to work rate (%)	Total	100	100	100	99	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 employees taking shortened working hours	Number of leave takers	63	64	62	79	69

Item	Details	Category	FY2022
Rate of employees taking child care 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%
	Percentage of female workers who gave birth in the fiscal year preceding disclosure, who took childcare leave that year.	Female	103%

Systems Unique to NGK * Record of the number of people using these systems

System Name	Details of the System	FY2018	FY2019	FY2020	FY2021	FY2022
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	27	25	26	38	19
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	42	62	58	73	68
Postpartum support leave	It is possible to use accumulated leave (expired paid leave from the previous fiscal year) for leave for childcare purposes	-	15	16	15	34
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 childcare leave and ensures both sides have proper understanding of procedures related to systems supporting childcare and work (it is	28	24	20	31	29

System Name	Details of the System	FY2018	FY2019	FY2020	FY2021	FY2022
Pre-maternity leave interview	also possible for the spouse to attend in the case of marriage between employees in the company)					
Interview before returning to work	Supports smooth transition back to work through consultation on work details and work style	32	25	25	32	27
Leave for accompanying a spouse's 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	2	0	1	4
Maternity gift	50,000 yen gift when a child is born	241	218	260	223	224
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	8	11	31	28	43
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	1	0	0	0
Priority parking spaces to support childcare	Priority parking spaces available at a commuter parking lot	32	40	40	41	37
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	7	5	3	4	4

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

Working hours	Time off	Financial support
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	7. Caring for a family member using accumulated vacation days 8. Unpaid days off to provide care	10. Care leave benefits 11. Care leave support fund 12. Lump-sum care allowance
	Leave of absence	
	9. Care leave	

Nursing Care Leave Usage (NGK)

[> Social Data Collection](#)

Diversity and Inclusion

- Basic Approach ▾
- System to Promote Diversity and Inclusion ▾
- Various Systems Supporting Our Promotion of Diversity and Inclusion ▾
- Initiatives to Promote Diversity and Inclusion ▾

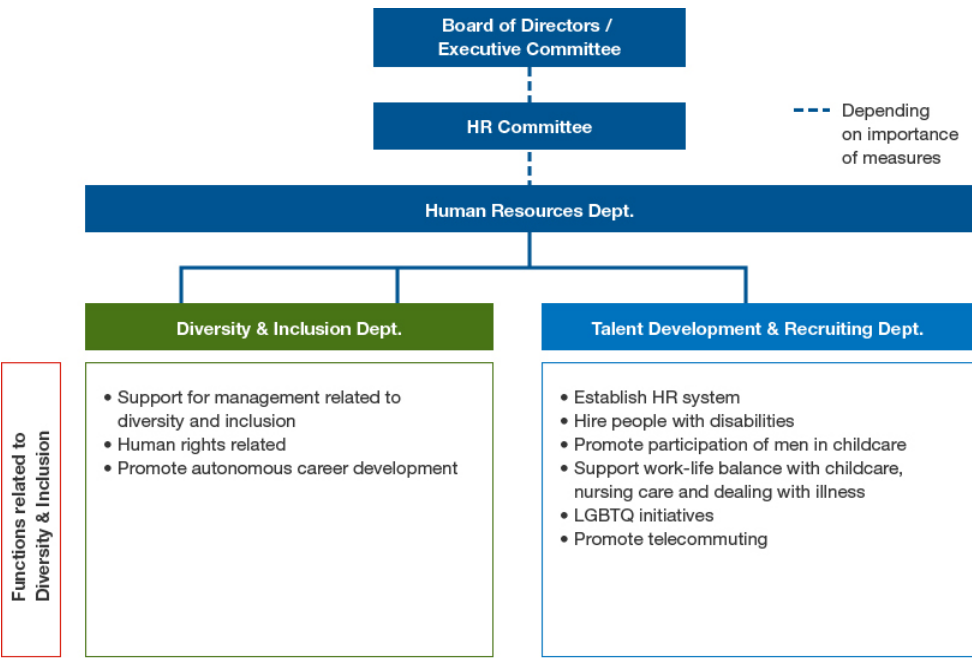
Basic Approach

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 workstyles by utilizing telecommuting, providing other flexible workstyles, 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 13,000 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



Various Systems Supporting Our Promotion of Diversity and Inclusion

Creating an Environment Conducive to Activities by Revising and Establishing Various Systems

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 employees 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 the company, 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 be regular employees, and 16 employees were appointed in FY2022.

Appointment from Fixed-Term Contract Manufacturing Workers to Regular Employees

[> Social Data Collection](#)

Follow-up System to Fit Young 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.

Systems to Support Early Return from Parental Leave

We have introduced a system to encourage and support employees so that they can return from maternity and childcare leave and resume their careers at an early stage.

[> Systems to Support Early Return from Parental Leave](#)

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 FY2022, there have been two employees rehired through the Come-Back System.

[> Come-Back System \(Japanese\)](#)

Initiatives to Promote Diversity and Inclusion

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

Policy

Support autonomous career development within the company

Initiatives for Employees to Chart Their Own Career Path

In FY2022, we carried out the following initiatives.

Career Autonomy E-Learning

We conducted e-learning aimed at all employees, and more than 4,000 employees participated. 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 the company 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 Plan Seminar for Employees in their 40's and 50's

Newly adding key personnel in their 40s to the list of targets, we held a new Career Plan 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 workstyle 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.

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 22 inquiries in the previous fiscal year. 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 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 too 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 raising children, and through their interactions with one another, they were able to share their stories, their struggles, and their advice.

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. We conducted the e-learning again in FY2022 for those who had yet to participate.

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 ratio of women among key personnel (managers) from 3.8% in FY2022 to about 10% by 2030 and by more than 20% by 2050.

Number of key personnel (managers)

Number of female key personnel (managers) as of March 31, 2023

[> Social Data Collection](#)

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 and attending employment seminars for people with disabilities. NGK hired two new graduates in FY2022. In addition, six new employees have been hired by our special subsidiaries. These hiring activities led to a hiring rate of 2.43% as of the end of FY2022. The government will raise the statutory hiring rate from 2.3% to 2.5% on April 1, 2024. Therefore, we will proactively conduct recruitment activities again in FY2023 to achieve the 2.5% statutory hiring rate.

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
“L-boshi” certification of corporate excellence in
the promotion of women’s active participation
Certification level 3 (2019)

Certified by the Ministry of Health, Labour and Welfare as a “Platinum Kurumin” Outstanding Childcare Support Company

Platinum Kurumin is a program which certifies companies that have taken higher standard initiatives among the companies which have been certified by the Minister of Health, Labour and Welfare (Kurumin certification) as a childcare support company which satisfies certain standards based on the Act on Advancement of Measures to Support Raising Next-Generation Children.



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

Certified as a Company Promoting Women’s Active Participation by Nagoya City*

In recognition of our efforts to create a workplace environment that encourages women’s active participation, such as revising our system for transferring to career-track positions, we were certified as a Company Promoting Women’s Active Participation by Nagoya City in January 2012 and recertified in January 2018.

* A system for certifying companies that conduct outstanding initiatives in the areas of (1) awareness improvement, (2) work-life balance, and (3) promotion of women’s active participation.



Aichi Prefecture
Certification of Aichi “Shining Women”
Companies (2016)



Nagoya City
Certification of corporate promotion of women’s
active participation (2011)

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 knowledges, 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



FY2023 Company-Wide Education Scheme

NGK employees										NGK executives		Group companies in Japan		Group companies outside Japan	
		New 1st-year hires		Group J		Group M		Group S		Key personnel		Employees	Executives	Employees	Executives
		Training for new hires and promoted employees	Training for new hires	Promoted to J1 technical and clerical	New M	New S	New section chiefs	New key personnel	Promoted to key personnel 2	Message from the President	NGK Group Philosophy	Code of Conduct	Overview	Code of Conduct	Overview
Human Skills	Values	Message from the President	Message from the President	NGK Group Philosophy	NGK Group Philosophy	NGK Group Philosophy	NGK Group Philosophy	NGK Group Philosophy	NGK Group Philosophy	Message from the President	NGK Group Philosophy	Code of Conduct	Overview	Code of Conduct	Overview
	Conceptual skills	Management concept	Management concept	Logical thinking (Problem solving)	Logical thinking (Problem solving)	Logical thinking (Problem solving)	Logical thinking (Problem solving)	Logical thinking (Problem solving)	Logical thinking (Problem solving)	Management concept	Management concept	Logical thinking (Problem solving)	Logical thinking (Problem solving)	Logical thinking (Problem solving)	Logical thinking (Problem solving)
	Human skills	Organizational operation	Organizational operation	Subordinate guidance and training	Subordinate guidance and training	Subordinate guidance and training	Subordinate guidance and training	Subordinate guidance and training	Subordinate guidance and training	Organizational operation	Organizational operation	Subordinate guidance and training	Subordinate guidance and training	Subordinate guidance and training	Subordinate guidance and training
	Career design	Autonomous career development	Autonomous career development	Dual career design	Dual career design	Dual career design	Dual career design	Dual career design	Dual career design	Autonomous career development	Autonomous career development	Dual career design	Dual career design	Dual career design	Dual career design
Professional Competencies	Manufacturing	Quality management	Quality management	Production control	Production control	Production control	Production control	Production control	Production control	Quality management	Quality management	Production control	Production control	Production control	Production control
	Technical skills	Unique technology	Unique technology	Staff, Technical	Staff, Technical	Staff, Technical	Staff, Technical	Staff, Technical	Staff, Technical	Unique technology	Unique technology	Staff, Technical	Staff, Technical	Staff, Technical	Staff, Technical
	Operations	Finance	Finance	General	General	General	General	General	General	Finance	Finance	General	General	General	General
	Global	Second staff company understanding	Second staff company understanding	Language and business skills	Language and business skills	Language and business skills	Language and business skills	Language and business skills	Language and business skills	Second staff company understanding	Second staff company understanding	Language and business skills	Language and business skills	Language and business skills	Language and business skills
Compliance Requirements in Job Performance	Basics	Business/financial conditions	Business/financial conditions	Systems and regulations	Systems and regulations	Systems and regulations	Systems and regulations	Systems and regulations	Systems and regulations	Business/financial conditions	Business/financial conditions	Systems and regulations	Systems and regulations	Systems and regulations	Systems and regulations
	Compliance	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law	Anti-trust law
	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health	Safety and health
	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment	Environment

[FY2023 Company-Wide Education Scheme \(PDF: 106KB\)](#)

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

Values

NGK training and education seeks to foster an understanding of the NGK Group Philosophy and Corporate Business Principles such that employees will not simply work for the sake of meeting their individual targets, but rather will think about the significance of the work they perform and the basis for their decision-making, leading to a sense of pride and shared identity as an NGK employee. It is not enough for employees to know what the NGK Group Philosophy and Corporate Business Principles are; we want employees to incorporate them into their behavior.

This approach is particularly evident in the corporate history training program that was launched full-scale at our head office in 2017 for every level of employee, from new hires to those promoted to managers. It is also incorporated into the educational programs of Group companies outside Japan in order to reach a variety of personnel. We will continue to develop and expand such programs.

Business Skills

We carry out training designed to equip employees with the mindset, knowledge, and skills they need to carry out their jobs. To ensure that the skills employees acquire are applicable and directly contribute to the work that they perform—i.e., practical skills instead of just knowledge—we provide coaching in cooperation with the participants' supervisors and training programs for handling challenges directly relevant to their own departments.

Career Support

In order to ensure that as many personnel as possible are able to actively participate in and contribute to the functioning of NGK, we provide employees with career development support in the form of a variety of effective HR initiatives based on our policy of "supporting the autonomous endeavors and career development of each individual employee as we strive to be a better company." This support is focused on cultivating personnel capable of thinking outside the limits of predetermined career models to chart their own career path.

Initiatives such as career design training programs targeting employees in their 40s and 50s, and seminars held at when employees are promoted serve as opportunities for employees to deepen their understanding of their own values and characteristics, and with an awareness of their role, think about who they want to be and how they can challenge themselves in their work to grow to become that person.

To this end, we are continuing to focus on ensuring that every employee is able to work to their full potential within the context of the many and varied environments that comprise the NGK Group.

[> Initiatives for Employees to Chart Their Own Career Path](#)

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 the company to every time they receive a promotion so that knowledge ends up being reliably translated into action.

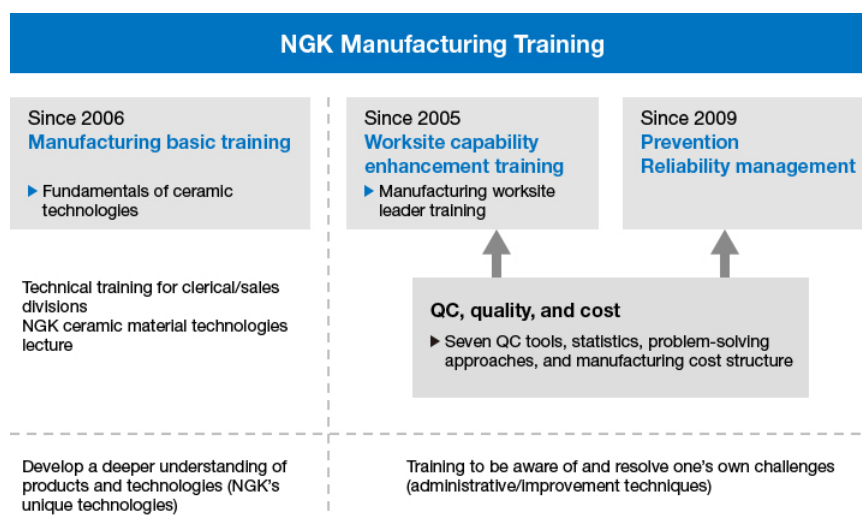
Manufacturing Training

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.

Manufacturing basic training is centered on 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 who independently pursue worksite capability improvements together with others both in and outside of their plant's organizational framework.



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 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 the company.

[> 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.

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.

Global 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 intercultural understanding, 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 global standard business skills like giving presentations in classes whose composition facilitates effective learning at each level.

Time spent learning English per new career-track hire (FY2022 results)

64 hours per year

* New employees with advanced English skills spent 24 hours per year and did not take English language courses

Practical Overseas Training / Global Training

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 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.

FY2022 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](#) 

Occupational Safety and Health

- Basic Approach ▾
- Structure to Promote Safety and Health Management ▾
- Enhancing Safety and Health Activities ▾
- Safety and Health Training ▾

Basic Approach

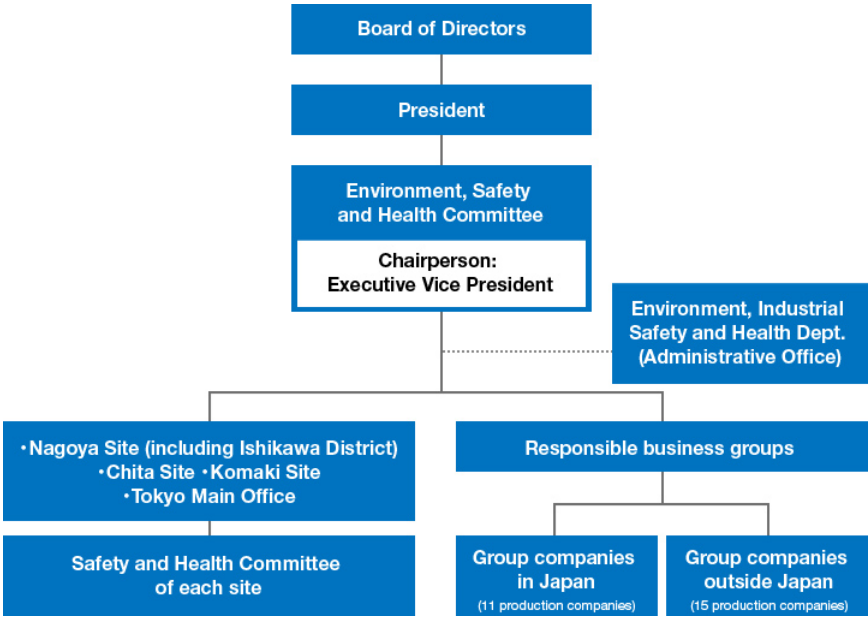
The NGK Group operates an ISO 45001-certified Occupational Safety and Health Management System (OSHMS) in line with its Safety and Health Policy. The OSHMS serves as a mechanism for the ongoing, systematic achievement of employee safety and health initiatives. By strictly implementing this system and 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 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 and undergoes a review by senior management. 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.



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 FY2022 Activities

Medium-Term Action Plan	Fiscal year implementation items	Key Activities
Strengthen Risk Management	Reduce risk of serious injuries/accidents in the workplace	We completed a reexamination of equipment/operations at all production sites, including overseas facilities, that present workers with a critical risk of being caught in rotating machinery or electric shock as well as equipment that presents a risk of explosion, such as degreasing furnaces and hydrogen furnaces, and we put into place operational safeguards (e.g., administrative measures) to control these risks. We are also mostly finished with the implementation of engineering or technical measures (e.g., equipment update or remodeling), except at some overseas sites.
Strengthen Group Governance	Entrench Group company governance mechanisms	In addition to safety and health-related auditing of Group companies by the dedicated department of the Head Office, Group company governance was strengthened through internal audits of Group companies by business group specialized teams responsible for overseeing them.

Numerical Targets

NGK has set the following numerical targets for 2023.

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

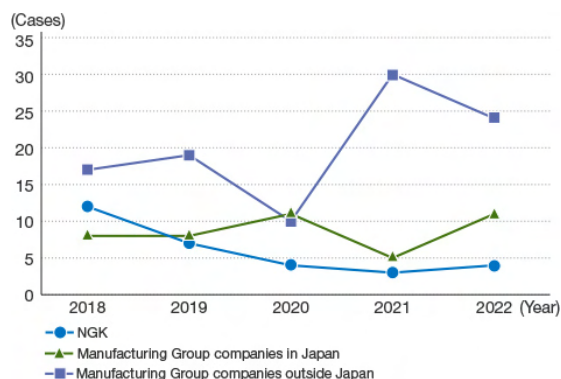
In 2022 there were no fatal or serious accidents throughout the Group. And the 2022 group-wide lost-worktime accident severity rate was 0.03.

Work-Related Fatalities

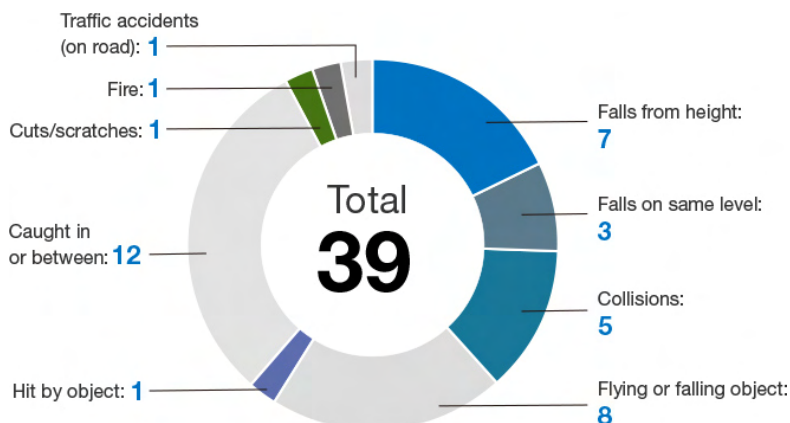
Work-Related Accidents

[Social Data Collection](#)

Trends in Work-Related Accidents



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



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 of each company. This ensures that we are able to thoroughly identify the cause and implement countermeasures against future recurrence.

In 2022, there were 39 non-lost worktime and lost worktime accidents Groupwide. Broken down, these included four at NGK, 11 at manufacturing Group companies in Japan, and 24 at manufacturing Group companies outside Japan. The number of times employees were caught in rotating machinery or electrocuted, an area of focus, was brought to zero, but falls on same level while walking (9 accidents) and daily supplementary work-related accidents occurring during preparations, cleaning or cleanup (13 accidents) stayed at the same level. As a result, we will conduct thorough risk assessments of daily supplementary work and further increase our ability to identify potential risks this year as well.

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, our 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 the company. In FY2022, a total of 2,708 employees received in-house group training on safety and health standards. The breakdown includes rank-based training/training for newly-promoted employees (647), danger prediction training (2,006), and ISO 45001 internal audit training (55). This excludes training conducted by each department such as worker training and job rotation 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 that provides a summary of safety and health related laws and regulations
Internal safety and health training	In-house group training required of employees, including workplace supervisor training and training on dust, low-voltage electricity, organic solvents, VDT, etc.
External safety and health training	Training conducted offsite required of employees, including 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

Training programs	Training curriculum
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 ISO45001 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 FY2022, 294 managers in research & development and engineering departments, including general managers, plant managers, and managers of the manufacturing department had obtained this qualification (Approx. 70% of target managers). 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 m² Danger-Prediction Training Center at our Chita Site, where we launched safety training led by specialist employees with experience outside of the company.

The training center features equipment that enables employees to safely experience work-related injuries that have occurred in the past including caught in or between 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 launched a new training program that combines this with conventional training approaches. As of FY2022, a running total of 6,327 NGK Group employees have participated.



Health Management

- Basic Approach ▾
- Health Management Promotion System ▾
- Initiatives to Shorten Total Hours Worked ▾
- Promoting Activities Supporting Mental and Physical Health ▾

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.

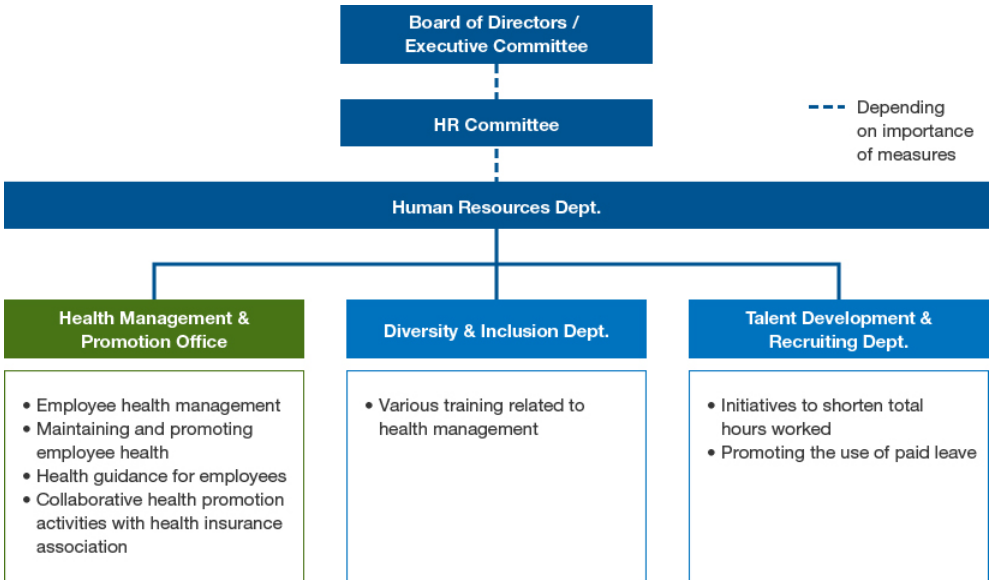
- Provide a workspace that is both people-friendly and work-friendly
- Cultivate a health-conscious corporate culture for executives, employees, and their families
- Promote early detection and early intervention for health concerns
- Offer support for mental health and wellbeing

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.

Human Resources Department Structure



Initiatives to Shorten Total Hours Worked

Reducing Long Work Hours

In July 2016, we 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 FY2022, there were 22 cases of overtime work exceeding the company's upper limit, but no cases which violated legal regulations (Full year results excluding seconded employees).

- Exceeded 70 hours: 4 cases (including 1 general employee) *Statutory limits not exceeded
- Exceeded 300 hours: 18 cases (including 9 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](#)

Promoting Activities Supporting Mental and Physical Health

Four Types of Care for Mental Health

We facilitate 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 FY2022, we carried out stress checks for all employees.

These test results were sent to each department and analyzed by group. Based on the results of this analysis, we conducted training and follow-ups for managers of workplaces with comparatively high stress levels in improving interpersonal relations within the workplace and improving the work environment.

Four Types of Care



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 lectures, health declaration challenges, the use of health apps for smartphones, physical strength measuring events, walking-age assessment events and related lectures, and recreational walks. New initiatives in FY2022 included streaming online fitness videos, holding online seminars on the themes of Dietary and Exercise Guidance and Exercising While Doing Daily Activities, and a 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.

Percentage of Employees Taking Regular Health Exams

Percentage of Employees Taking Metabolic Syndrome Checkups

Number of Participants in Health Promotion Initiatives

[> 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.

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 "Bright 500" list under the SME category of the Certified Health & Productivity Management Outstanding Organizations Recognition Program for two 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.



Sustainability

Social Contribution Activities

Basic Approach | NGK's 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 FY2022, a total of 50 reports were received.

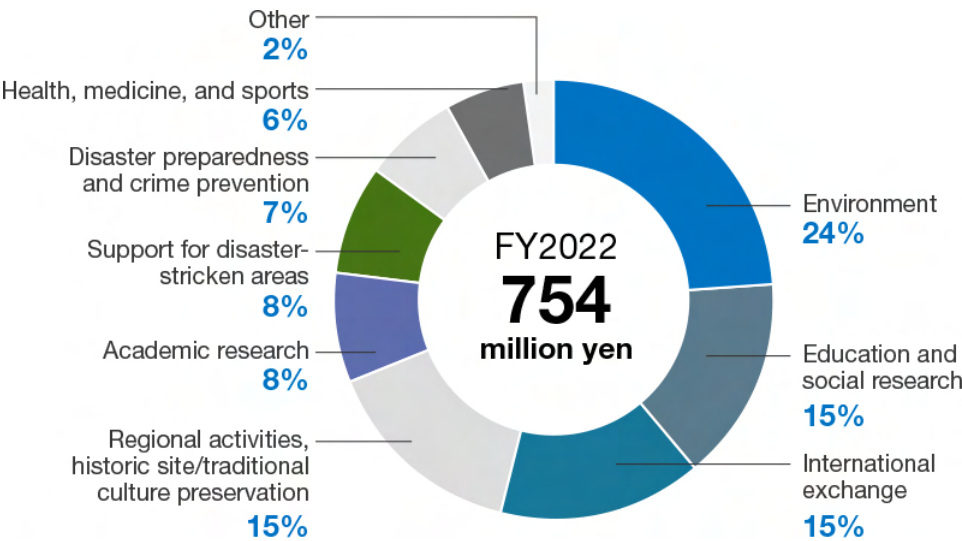
Social contribution expenditures

Number of social contribution programs

Number of collaborations with NPOs/NGOs

> Social Data Collection

Breakdown of Activities



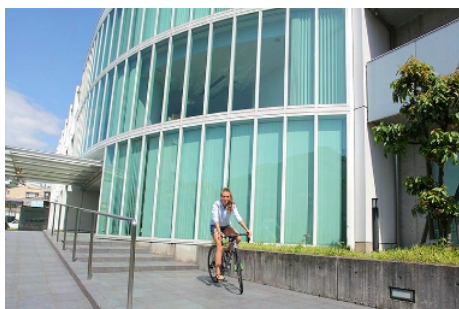
NGK's Social Contribution Activities

Providing Scholarships and Assistance to International Students

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. In FY2022, we provided housing to 38 students from seven countries, and scholarships (non-repayable) to 21 students from 10 countries.

On April 1, 2022, this fund became a Public Interest Incorporated Foundation.



The NGK Foundation for International Students

Exchange Between Supported Students, Communities, and Employees

NGK organizes a variety of activities to provide opportunities for grassroots international relations between supported students, regional communities, and employees. Since the year 2000, we have held annual exchange meetings where international students introduce their native languages and cultures. In FY2022 we held six 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 45 people participated, including residents living near the dormitory, and students and teachers from our Ishiki Cosmos Futaebori Class. Exchange students took on the role of lecturers and talked about the cultures of Togo, China, Bangladesh, South Korea, and Laos. As of FY2022 a cumulative total of 1,055 people have participated in such exchange meetings.

Communication After Support Ends

To maintain relationships with international students after support ends, each year, we send out a New Year's greeting card that includes a company status report to former and current students. We also distribute NGK International Friendship Club Members Cards that include our contact information to international students after support ends. In FY2022, we sent New Year's cards with updates on the Foundation and NGK to around 300 students who have received support in the past.

Beginning Japanese Language Learning Support for Foreign Children Living in Japan

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.

We have provided one of the rooms in our company dormitory for use as a Japanese classroom. And employees who have been stationed overseas leverage their knowledge and skills to work as teaching assistants and help boost the learning language proficiency necessary for studying the subject in Japanese schools.

Aichi Prefecture has the second largest population of foreign residents in Japan, after Tokyo. And it has the largest number of foreign national children requiring Japanese-language instruction. Komaki is one of the municipalities with a particularly large number of foreign national children. NGK began this support as part of our social contribution activities, in part because there are approximately 300 foreign nationals working at NGK Ceramic Device.

In FY2022, we provided about two hours of learning support, twice a week, for 19 children, for a total of 91 times. Going forward, we will consider expanding the range of ages and localities to which we can offer support.

Support for Wheelchair Tennis

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. In 2020, we established a new hard court as well as barrier-free outdoor restrooms at the NGK Group company-operated Moronoki Tennis Club (located in Midori-ku in Nagoya City), which is 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 FY2022, we held a support ceremony 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 wheelchair tennis athletes.



Social Data Collection

Basic Information on Employees

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of employees* ¹	NGK	-	4,119	4,224	4,316	4,382	4,547	Persons
	NGK Group	-	20,115	20,000	19,695	20,099	20,077	Persons
Number of employees by gender	NGK ²	Total	4,355	4,529	4,650	4,745	4,877	Persons
		Male	3,807	3,951	4,046	4,132	4,258	Persons
		Female	548	578	604	613	619	Persons
	NGK Group	Total	20,578	20,409	20,195	20,656	20,450	Persons
		Male	16,167	16,010	15,920	16,393	11,816	Persons
		Female	4,411	4,399	4,275	4,263	3,757	Persons
Number of employees by employment type	NGK	Full-time employee	4,355	4,529	4,650	4,745	4,877	Persons
		Contract employee	507	464	287	272	280	Persons
		Temporary employee	389	395	302	372	491	Persons
Employee composition by region	NGK Group	Japan	37	39	37	37	38	%
		Europe	21	21	25	25	24	%
		North and Central America	16	15	15	15	16	%
		Asia	25	23	22	22	21	%
		Other	1	1	1	1	1	%
Retention rate of new hires after 3 years	NGK	Total	92.6	93.5	92.8	90.3	88.7	%
		Male	97.6	95.2	92.7	91.0	90.7	%
		Female	83.9	85.1	93.3	87.9	81.8	%
Average age	NGK	Total	38.7	38.8	39.2	40.0	39.7	Years old
		Male	38.7	39.0	39.3	40.1	39.9	Years old
		Female	38.4	38.6	38.6	39.6	39.4	Years old
Average length of service	NGK	Total	13.5	13.7	14.3	15.6	15.5	Years
		Male	13.4	13.7	14.3	15.6	15.5	Years
		Female	14.1	14.1	14.1	15.6	15.5	Years
Average salary	NGK	-	7,888,094	7,770,318	7,635,830	7,696,997	8,240,174	Yen
Labor union membership rate* ³	NGK	-	96	97	98	98	98	%
Employee turnover rate (Full-time employees only, excluding retiring employees)	NGK	Total	1.4	1.5	1.3	1.3	1.7	%
		Male	1.2	1.3	1.2	1.1	1.5	%
		Female	2.9	2.8	1.7	2.0	2.9	%
Voluntary resignation rate (Full-time employees only, excluding retiring employees)* ⁴	NGK	Total	1.2	1.5	1.2	1.2	1.5	%
		Male	1.0	1.3	1.1	1.0	1.3	%
		Female	2.5	2.6	1.6	2.0	2.7	%

Employee Engagement

Survey on Workplace Vitality: satisfaction* ⁵	NGK	-	58.6	-	59.3	-	59.4	%
Survey on Workplace Vitality: career autonomy score	NGK	Target	-	-	-	-	3.5 or more	points
		Result	-	-	-	-	3.6	points
Survey on Workplace Vitality: advancement of women in the workplace score	NGK	Target	-	-	-	-	3.5 or more	points
		Result	-	-	-	-	3.45	points
Survey on Workplace Vitality: score related to utilization of diversity	NGK	Target	-	-	-	-	3.5 or more	points
		Result	-	-	-	-	3.34	points
Survey on Workplace Vitality: score related to opportunities to take on challenges	NGK	Target	-	-	-	-	3.5 or more	points
		Result	-	-	-	-	3.26	points
Survey on Workplace Vitality: score related to psychological safety	NGK	Target	-	-	-	-	3.5 or more	points
		Result	-	-	-	-	3.71	points
Survey on Workplace Vitality: score related to worthwhileness of work	NGK	Target	-	-	-	-	3.5 or more	points
		Result	3.47	-	3.49	-	3.49	points
Survey on Workplace Vitality: score related to work-life balance	NGK	Target	-	-	-	-	3.5 or more	points
		Result	3.38	-	3.53	-	3.52	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

Childrearing Support Measures

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of childcare leave takers	NGK	Total	48	40	64	79	157	Persons
		Male	23	19	35	56	127	Persons
		Female	25	21	29	23	30	Persons
Ratio of employees that return to work after childcare leave	NGK	Total	100	100	100	99	100	%
Shortened working hours during childrearing	NGK	Number of leave takers	63	64	62	79	69	Persons

Item	Details	Scope	Category	FY2022	Unit
Rate of employees taking child care 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.	NGK	Male	91	%
	Percentage of female workers who gave birth in the fiscal year preceding disclosure, who took childcare leave that year.		Female	103	%

Systems Unique to NGK

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Return to work after childbirth lump-sum payment	NGK	27	25	26	38	19	Persons
System for taking annual paid leave in hourly increments (for employees working shortened hours)	NGK	42	62	58	73	68	Persons
Childcare leave for fathers using accumulated vacation days	NGK	19	31	54	53	100	Persons
Pre-maternity leave interview	NGK	28	24	20	31	29	Persons
Interview before returning to work	NGK	32	25	25	32	27	Persons
Leave for accompanying a spouse's overseas assignment	NGK	2	2	0	1	4	Persons
Maternity gift	NGK	241	218	260	223	224	Persons
Babysitter expense subsidy	NGK	8	11	31	28	43	Persons
Childcare Concierge (available to those who live in the Tokyo metropolitan area)	NGK	1	1	0	0	0	Persons
Priority parking spaces to support childcare	NGK	32	40	40	41	37	Persons
Lump-sum payment for early return	NGK	7	5	3	4	4	Persons

Nursing Care Support

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of employees taking long-term nursing care leave	NGK	Total	1	1	1	1	3	Persons
	NGK	Male	0	1	0	0	2	Persons
	NGK	Female	1	0	1	1	1	Persons
Number of employees taking nursing care leave	NGK	Total	0	1	0	34	17	Persons
	NGK	Male	0	1	0	23	13	Persons
	NGK	Female	0	0	0	11	4	Persons

Diversity & Inclusion

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
New graduate hires* ¹	NGK	Total	155	143	141	105	139	Persons
		Male	122	115	108	89	123	Persons
		Female	33	28	33	16	16	Persons
Ratio of female employees among new graduate hires* ²	NGK	Total	26	28	34	17	14	%
		Administrative-related; target 30%	42	44	52	33	29	%
		Engineering-related; target 20%	22	24	27	13	11	%
Mid-career hires	NGK	Total	117	104	41	55	125	Persons
		Male	102	87	35	51	110	Persons
		Female	15	17	6	4	15	Persons
Ratio of mid-career hires	NGK	Total	43	42	23	34	47	%
Ratio of female employees* ³	NGK	-	12.6	12.8	13.0	12.9	12.7	%
	NGK Group	-	21.4	21.6	21.2	20.6	21.3	%
Number of key personnel (employees in managerial positions)	NGK	Total	890	900	969	1,028	1,085	Persons
		Male	870	874	940	993	1,044	Persons
		Female	20	26	29	35	41	Persons
		Dept. managers or higher	4	5	5	5	6	Persons
		Ratio of female employees	2.2	2.9	3.0	3.4	3.8	%
	Group companies outside Japan	Ratio of female employees	16	20.2	23.1	23.1	19.4	%
Female Directors	NGK	Total	12	13	9	9	9	Persons
		Female	1	1	1	1	1	Persons
		Ratio	8.3	7.7	11.1	11.1	11.1	%
Ratio of employees with disabilities	NGK, NGK YU-Service, NGK Ceramic Device	Number of people	62	135	145	155	160	Persons
		Employment rate	1.92	2.20	2.35	2.46	2.43	%

*1 Note: Excluding new graduate temp-to-perm employees

*2 Applies to regular-position employees

*3 Ratio among all employees

Number of Female Key Personnel (Managers) as of March 31, 2023

Item	Category	NGK	Group companies in Japan	Group companies outside Japan	Total	Unit
Number of female key personnel (employees in managerial positions)	Total	1,085	324	609	2,018	Persons
	Male	1,044	320	491	1,855	Persons
	Female	41	4	118	163	Persons
	Ratio of female employees	3.8	1.2	19.4	8.1	%

Wage Gap between Male and Female Employees in FY2022

Item	Scope	Category	FY2022	Unit
Wage gap between male and female employees	NGK	All employees	77.1	%
		Regular employment employees	77.2	%
		Part-time and fixed-term employees	103.2	%

Item	Scope	Category	Average salary for men	Average salary for women	FY2022	Unit
Wage gap between male and female employees (by manager level and non-manager level)	NGK	Manager level (basic salary only)	7,079,059 yen	6,747,000 yen	95.3	%
		Manager level (basic salary + other financial incentives)	12,726,615 yen	11,363,506 yen	89.3	%
		Non-manager level	7,319,219 yen	6,307,267 yen	86.2	%

Internal Job Application System

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Job application system	NGK	Number of jobs posted	28	28	9	59	80	Cases
		Number of recruits	40	37	13	86	108	Persons
		Number of applicants	7	18	15	50	56	Persons
		Number of successful applications	2	7	6	17	25	Persons

Appointment from Fixed-Term Contract Manufacturing Workers to Regular Employees

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of manufacturing contract employees promoted to being regular employees	NGK	37	41	15	18	16	Persons

Human Resource Development

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Training participant summary (total number of people)	NGK	Total	4,661	4,685	2,527	8,201	6,377	Persons
		Key personnel	991	813	480	665	719	Persons
		General employees	3,670	3,873	2,047	7,536	5,658	Persons
Total		21.3	21.4	6.0	28.0	18.0	Hours	
Average annual hours spent for training per full-time employee		Key personnel	12.8	12.3	4.2	18.0	11.0	Hours
General employees		25.0	23.7	6.4	31.0	20.0	Hours	
Average annual cost of training per full-time employee		-	63,000	53,000	22,000	29,522	31,138	Yen

Occupational Safety and Health

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of work-related fatalities	NGK	-	1 ^{*1}	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	-	1 ^{*1}	0	0	0	0	Persons
Number of work-related accidents	NGK	Lost worktime accidents	4	0	1	2	3	Cases
		Non-lost worktime accidents	8	7	3	1	1	Cases
		Total	12	7	4	3	4	Cases
	Manufacturing Group companies in Japan	Lost worktime accidents	1	1	3	3	9	Cases
		Non-lost worktime accidents	7	7	8	2	2	Cases
		Total	8	8	11	5	11	Cases
	Manufacturing Group companies outside Japan	Lost worktime accidents	8	13	7	24	21	Cases
		Non-lost worktime accidents	9	6	3	6	3	Cases
		Total	17	19	10	30	24	Cases
	Group total	-	37	34	25	38	39	Cases
Number of work-related accidents at the level of lost worktime accidents and more serious in contractors	NGK	-	1	0	1	0	0	Cases
	Manufacturing Group companies in Japan	-	1	0	0	0	0	Cases
	Manufacturing Group companies outside Japan	-	3	3	1	2	2	Cases
	Group total	-	5	3	2	2	2	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	-	0.19	0.01	0.00	0.06	0.03	Days
	NGK	-	0.74	0.00	0.00	0.15	0.02	Days
	Manufacturing Group companies in Japan	-	0.00	0.01	0.00	0.00	0.03	Days
	Manufacturing Group companies outside Japan	-	0.02	0.02	0.01	0.04	0.03	Days
	All industries (Japan, sites with 1,000 or more employees) ^{*2}	-	0.03	0.03	0.03	0.04	0.03	Days
	Manufacturing industry (Japan, sites with 1,000 or more employees) ^{*2}	-	0.03	0.04	0.03	0.03	0.02	Days
Lost time injury frequency (number of lost time injuries per 1 million hours worked)	NGK Group	-	0.32	0.34	0.28	0.67	0.79	Cases
	NGK	-	0.40	0.00	0.10	0.19	0.28	Cases
	Manufacturing Group companies in Japan	-	0.14	0.13	0.46	0.43	1.27	Cases
	Manufacturing Group companies outside Japan	-	0.34	0.56	0.31	0.93	0.86	Cases
	All industries (Japan, sites with 1,000 or more employees) ^{*2}	-	0.52	0.47	0.69	0.69	0.62	Cases
	Manufacturing industry (Japan, sites with 1,000 or more employees) ^{*2}	-	0.29	0.26	0.28	0.31	0.30	Cases
Occupational illness frequency rate (n/million work hours)	NGK	-	0.10	0.00	0.00	0.00	0.00	%
Acquisition of occupational safety and health management system certification ^{*3}	NGK	ISO 45001 and JIS Q 45100	100	100	100	100	100	%
	11 manufacturing Group companies in Japan	ISO 45001 and JIS Q 45100	58	100	100	100	100	%
	15 manufacturing Group companies outside Japan	ISO 45001	40	73	93	100	100	%

^{*1} In 2018 there was one work-related fatality. This fatality was the result of a traffic accident involving the truck of another company, which struck an NGK employee at a pedestrian crossing on a public road.

^{*2} Statistics on work-related accidents from Japan's Ministry of Health, Labour and Welfare.

^{*3} Nagoya Site, Chita Site, Komaki Site, Ishikawa Plant, Mitake Plant

Mental and Physical Health Promotion

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Hours / overtime hours worked (Annual fixed working hours: 1,919 hours)	NGK general employees	Annual actual working hours	2,081	2,059	2,044	2,044	2,016	Hours
		Average overtime work per month	25.2	23.7	21.6	23.4	22.8	Hours
	NGK including key personnel (managers)	Annual actual working hours	2,087	2,056	2,057	2,059	2,029	Hours
		Average overtime work per month	25.2	23.6	22.0	23.8	23.2	Hours
	NGK manufacturing divisions	Annual actual working hours	2,129	2,067	2,061	2,056	2,024	Hours
		Average overtime work per month	27.3	24.4	22.8	24.1	23.2	Hours
	NGK non-manufacturing divisions	Annual actual working hours	2,050	2,052	2,037	2,038	2,011	Hours
		Average overtime work per month	24.0	23.2	21.1	23.1	22.6	Hours
Paid leave: number of days used, utilization rate	NGK	Days used	12.8	14.1	11.9	13.8	15.1	Days
		Utilization rate	72.5	77.5	67.5	76.5	83.3	%
Number of employees having consultations about long work hours ^{*1}	NGK	All	243	78	41	37	27	Persons
Percentage of employees taking stress checks	NGK	-	94.9	95.9	94.1	95.2	95.4	%
Percentage of employees with high stress	NGK	-	11.7	10.7	9.9	9.0	9.5	%
Position-based mental care education	NGK	All	567	614	585	517	565	Persons
		New hires	192	143	140	105	139	Persons
		General employees	306	339	362	307	311	Persons
		Key personnel	69	132	83	105	115	Persons
Regular health exams ^{*2}	NGK	Total target employees	4,683	4,936	4,967	4,857	4,974	Persons
		Number taking health exam	4,601	4,855	4,894	4,728	4,910	Persons
		Number of exceptions ^{*3}	82	81	73	129	64	Persons
		Health exam ratio	100	100	100	100	100	%
Percentage of employees taking metabolic syndrome checkups	NGK	-	86.3	87.5	85.7	88.7	-	%
Percentage with metabolic syndrome		-	14.3	13.2	15.8	13.3	-	%
Percentage under medical guidance		-	56.7	64.6	57.5	59.1	-	%
Number of participants in health lectures ^{*4}	NGK managers	-	270	300	-	-	-	Persons
Number of participants in the health declaration challenge ^{*4}	NGK employees	-	1,590	1,199	1,560	1,505	865	Persons
Number of participants in smartphone health apps ^{*4}	NGK employees and families	-	742	1,127	1,134	1,511	1,703	Persons
Number of participants in recreational walks ^{*4}	NGK employees and families	-	163	223	-	-	-	Persons
Online seminars	NGK employees and families	-	-	-	146	1,002	436	Persons
Smoking ratio	NGK	-	25.0	25.5	23.5	22.2	21.8	%

^{*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} Employees on maternity leave, temporary retirement, etc.

^{*4} Initiatives marked with a "-" in a fiscal year were not implemented in that fiscal year.

Quality Management System

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Acquisition of ISO 9001 or IATF 16949 certification/percentage	NGK Group	97	97	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	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Social contribution expenditures	NGK Group	3.02	2.73	2.96	5.33	7.54	100 million yen
Number of social contribution programs		10	13	10	16	10	Cases
Number of collaborations with NPOs/NGOs		4	4	4	3	2	Cases

Sustainability

Governance System

- [Basic Approach](#) ▾ | [Steps Taken to Strengthen Corporate Governance](#) ▾ | [Corporate Governance System](#) ▾ | [Committees on Corporate Governance](#) ▾ | [Internal Control Systems](#) ▾

Basic Approach

NGK’s basic policy on corporate governance is to ensure legality in business activities and transparency in management. The Company 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 the company’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](#) >

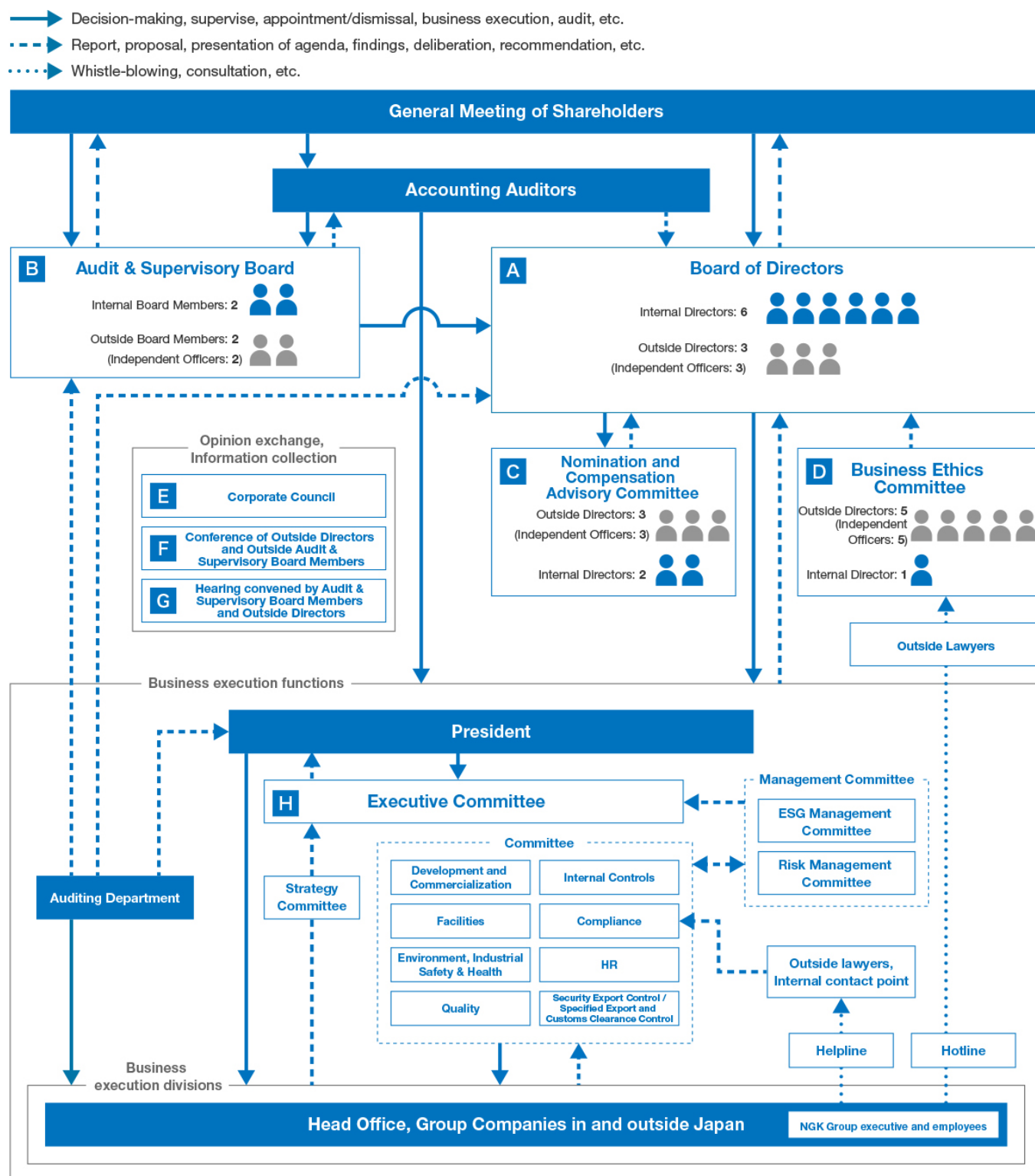
Steps Taken to Strengthen Corporate Governance

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	January 2019	Revised the NGK Group Corporate Business Principles
April 2003	Revised guidelines into the NGK Group Corporate Business Principles	April 2019	Established the ESG Committee
June 2005	Introduced an executive officer system	February 2020	Endorsement of recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)
	Introduced a stock option	April 2020	Established the Compliance Committee
	Introduced an outside officer system		Established the HR Committee
July 2005	Established the CSR Committee	April 2021	Formulated the NGK Group Vision
April 2007	Established the CSR Office		Formulated the NGK Group Human Rights Policy
June 2010	Appointed independent directors		Established the NGK Group Basic Guidelines for Compliance Activities
July 2011	Revised the NGK Group Corporate Business Principles		Established the ESG Management Department
April 2015	Signed on to the UN Global Compact	June 2021	Outside directors increased to 1/3rd of Board of Directors
June 2015	Established the Global Compliance Office		An outside director made the chair of the Nomination and Compensation Advisory Committee
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 2022	Established the ESG Management Committee
June 2017	Appointed one additional outside director	June 2022	Introduced a Restricted Share Compensation Plan
October 2018	Appointed a chief compliance officer	April 2023	Established the Risk Management Committee
		May 2023	Formulated the NGK Group Basic Sustainability Policy
		July 2023	Revised the NGK Group Corporate Business Principles and established the NGK Group Code of Conduct

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.



Committees on Corporate Governance

A Board of Directors

No. of members: 9; Convened 14 times in FY2022

The Board of Directors is composed of nine directors (eight male, one female; one third 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 removing representative directors, and authorizing business reports and financial statements etc., the disposal and acceptance of transfer of important assets, the appointment and dismissal 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 main agenda items for FY2022 were as follows.

- Budget and financial results
- Investment in production facilities, R&D, etc.
- Formulation of the NGK Group Digital Vision
- Initiatives for creation of new business (Progress report on New Value 1000)
- Formulation of statement regarding the UK Modern Slavery Act
- Progress report on the 5th Five-Year Environmental Action Plan
- Initiatives for business portfolio
- Progress report on Manufacturing ∞ (Chain) Innovation
- Revision of succession plan for NGK Group Chief Executive Officer
- Dissolution and liquidation of Group companies and investment in joint ventures
- Establishment of the Risk Management Committee
- Report on major committee activities, intellectual property activities, IR activities, etc.

B Audit & Supervisory Board

No. of members: 4; Convened 14 times in FY2022

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 FY2022 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 of the Accounting Auditor
- Confirmation of proposals and documents to be submitted to the General Meeting of Shareholders
- Consent to a pre-agreement process for non-assurance services provided by the auditing firm to which the Accounting Auditor belongs and its network firms

[Reports]

- Report on audit activities by full-time Audit & Supervisory Board members
- Audit plan by the Accounting Auditor
- Financial audit report by the Accounting Auditor
- Report on the results of internal audits by the Auditing Department

C Nomination and Compensation Advisory Committee

No. of members: 5; Convened 2 times in FY2022

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 one female member. 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 FY2022 were as follows.

- Personnel matters for directors and Audit & Supervisory Board members
- Response in the event of an emergency with the Chief Executive Officer
- Upper limit on the total amount of compensation for directors and the Audit & Supervisory Board members as a whole
- 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 FY2022
- Matters relating to the Chief Executive Officer succession plan

D Business Ethics Committee

No. of members: 6; Convened 5 times in FY2022

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 five male members and one female member.

E Corporate Council

No. of members: 11; Convened 2 times in FY2022

The Corporate Council is a council where outside officers (outside directors and outside Audit & Supervisory Board members), representative 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 ten male members and one female member.

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

No. of members: 5; Convened 2 times in FY2022

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 one female member.

G Hearing Convened by Audit & Supervisory Board Members and Outside Directors

No. of members: 7; Convened 14 times in FY2022

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 one female member.

H Executive Committee

No. of members: 16; Convened 21 times in FY2022

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 2022 to March 2023.

Strategy Committee Times held: 18	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: 9	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. <small>Note: In April 2022, we renamed the former "ESG Committee" to the "ESG Management Committee." The Committee will more proactively addresses the NGK Group's sustainability issues and the activities will be appropriately supervised by the Board of Directors.</small>
Risk Management Committee (Newly established in April 2023)	This is a body established to report important matters relating to risk management to the Board of Directors and Executive Committee, to assist the Board of Directors in supervising the Group's risk management, and to contribute to increasing the sophistication of risk management.
Development and Commercialization Committee Times held: 2	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: 14	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: 5	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. <ol style="list-style-type: none"> 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 commercialization of developed products 4. Other quality-related matters determined to be important
Environment, Safety & Health Committee Times held: 3	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. <ol style="list-style-type: none"> 1. Observance of laws, regulations, and corporate ethics <ol style="list-style-type: none"> 1.1. Determination, revision, or abolition of basic policies related to the observance of laws, regulations, and corporate ethics 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 <small>Note: Deliberation items for Board of Directors meetings</small>

Compliance Committee Times held: 3	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.

Internal Control Systems

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

We revised the NGK Group Corporate Business Principles which was formulated as a policy embodying the Group's corporate philosophy. These guidelines specify the Group's fundamental stance on sincerely engaging in business activities and fulfilling its responsibilities to society while pursuing economic efficiency. In addition, we established the NGK Group Code of Conduct in July 2023 as specific matters which our officers and employees should put into practice. The departments and committees which handle the related matters are responsible for ensuring that the code and principles are thoroughly applied in the Group. The ESG Management Committee coordinates the overall process. The Business Ethics Committee handles matters concerning improper acts and legal violations involving NGK executives, and ensuring compliance with competition laws and Foreign Corrupt Practice Act.

The Board of Directors adopted an amendment to the "Resolution for the Development of Systems to Ensure the Appropriateness of Operations" at the July 2023 board meeting.

Sustainability

Board of Directors

[Structure of the Board of Directors](#) ▾[Outside Directors/Outside Audit & Supervisory Board Members](#) ▾[Effectiveness of the Board of Directors](#) ▾[Policy on Cross-Shareholdings](#) ▾

Structure of the Board of Directors

Directors >

Director Attributes and Committee Membership (as of June 30, 2023)

Name	Age	Gender	Period in Office	Board of Directors	Nomination and Compensation Advisory Committee	Corporate Council	Conference of Outside Directors and Outside Audit & Supervisory Board Members	Hearing Convened by Audit & Supervisory Board Members and Outside Directors	Business Ethics Committee
Taku Oshima	66	Male	9	◎	○	○			
Shigeru Kobayashi	62	Male	3	○	○	○			
Chiaki Niwa	63	Male	8	○		○			
Ryohei Iwasaki	63	Male	14	○		○			
Tadaaki Yamada	62	Male	1	○		○			○
Hideaki Shindo	58	Male	2	○		○			
Hiroyuki Kamano Outside / Independent	77	Male	12	○	◎	○	○	○	◎
Emiko Hamada Outside / Independent	64	Female	6	○	○	○	○	○	○
Kazuo Furukawa Outside / Independent	76	Male	4	○	○	○	○	○	○

* ◎: Chair / ○: Attending member

* The term of office will run from the conclusion of the Ordinary General Meeting of Shareholders held on June 26, 2023 to the conclusion of the final Ordinary General Meeting of Shareholders in the fiscal year ending within one year.

Expertise of Directors (as of June 30, 2023)

Name	Field of experience				Specialized knowledge				
	Overall management	Overseas business International experience	Marketing	Manufacturing technology R&D	Finance	Legal Compliance	HR/Labor	ICT	Environment Energy conservation
Taku Oshima	○	○		○		○	○		○
Shigeru Kobayashi	○	○	○						○
Chiaki Niwa	○			○		○		○	○
Ryohei Iwasaki	○	○	○				○	○	
Tadaaki Yamada			○			○	○		
Hideaki Shindo	○	○			○		○		
Hiroyuki Kamano	○	○				○			
Emiko Hamada	○	○		○				○	○
Kazuo Furukawa	○	○		○			○	○	○

Ratio of Independent Outside Directors

Target ratio of Independent Outside Directors	Result	Name
One-third of the Board of Directors	1/3	Hiroyuki Kamano, Emiko Hamada, and Kazuo Furukawa

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 achieve 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 independence of the Board of Directors by specifying that one-third or more of directors be independent 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.

Outside Directors / Outside Audit & Supervisory Board Members**Standard and Policy for Independence of Outside Directors and Outside Audit & Supervisory Board Members****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, the Company 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.

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 last 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, in 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 in 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 in any of 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, in 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 Appointment of Outside Directors and Outside Audit & Supervisory Board Members

Outside Directors

Name	Reasons for appointment
Hiroyuki Kamano	<p>Having long engaged in legal practice as an attorney-at-law, Mr. Kamano possesses a wealth of experience and achievements in the legal community, including serving as Vice President of the Tokyo Bar Association. We expect Mr. Kamano to continue to utilize his expertise, extensive experience, and broad insight to oversee company management from an independent objective standpoint, primarily from the perspective of compliance. As an outside director of NGK, Mr. Kamano has been appropriately providing his opinions on matters such as our legal strategies and strengthening our quality management structure, making recommendations on business execution at NGK, and overseeing management. Therefore, we have elected him as an outside director.</p> <p>Mr. Kamano holds 1,000 shares of NGK stock. However, apart from this, he has no personal, financial, or important business relationship with, nor other vested interest in, NGK.</p> <p>Concurrent with his work with NGK, Mr. Kamano serves in a variety of roles, including as an outside director of Spancrete Corporation and as an outside director (Audit & Supervisory Committee member) of House Foods Group Inc. However, no personal, financial, or important business relationship, nor other vested interest, exists between NGK and the organizations with which Mr. Kamano currently works.</p>
Emiko Hamada	<p>Ms. 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. We expect Ms. Hamada to continue to utilize insights she has developed through her career to oversee the management of NGK from an independent, objective standpoint based mainly on the perspectives of R&D and product commercialization. As an outside director of NGK, Ms. Hamada has been actually stating her opinions on product development, how to proceed on new businesses and personnel policies, making recommendations on business execution at NGK, and overseeing management. We have therefore elected her as an outside director.</p> <p>Ms. Hamada holds 5,000 shares of NGK stock. However, apart from this, she has no personal, financial, or important business relationship with, nor other vested interest in, NGK. Concurrent with her work with NGK, she serves in a variety of roles, including as an outside director for Taiyo Yuden Co., Ltd. However, no personal, financial, or important business relationship, nor other vested interest, exists between NGK and the organizations with which she currently works.</p>

Name	Reasons for appointment
Kazuo Furukawa	<p>After serving as President & CEO of the Information and Telecommunication Systems Group at Hitachi, Ltd., Kazuo Furukawa served as Director, Representative Executive Officer, President & COO of the company. He also served as Chairperson of NEDO (formerly an Incorporated Administrative Agency, now a National Research and Development Agency) and possesses knowledge in information & telecommunications and other areas of technology and experience in managing large organizations. We expect him to continue to utilize his broad knowledge and experience to oversee the management of NGK from an independent, objective standpoint as a management expert. As an outside director of NGK, Mr. Furukawa has been appropriately providing a wide range of opinions on management decisions and business activities in general, making recommendations on business execution at NGK, and overseeing management. We have therefore elected him as an outside director.</p> <p>Mr. Furukawa holds 5,000 shares of NGK stock. However, apart from this, he has no personal, financial, or important business relationship with, nor other vested interest in, NGK. Concurrent with his work with NGK, he serves in a variety of roles, including as an outside director (Audit & Supervisory Committee member) for the Pasona Group Inc. However, no personal, financial, or important business relationship, nor other vested interest, exists between NGK and the organizations with which he currently works.</p>

Outside Audit & Supervisory Board Members

Name	Reasons for appointment
Masayoshi Sakaguchi	<p>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 the Company's corporate value such as by making use of this experience to express his opinions on the international situation, the impact of regulations in Japan and overseas on business, and the development of a risk management structure as an 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.</p> <p>Mr. Sakaguchi has no personal, financial, or important business relationship with, nor other vested interest in, NGK. He has served as senior advisor to Nippon Life Insurance Company, which is both an NGK shareholder and a source of financing for NGK. However, at the end of FY2022, 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 shareholder 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 our payments to that company 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.</p> <p>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, exists between NGK and the organizations with which he currently works.</p>
Takashi Kimura	<p>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 to contribute to enhancing the corporate value of NGK by auditing NGK's overall management, and have therefore elected him as an outside Audit & Supervisory Board member.</p> <p>Mr. Kimura has no personal, financial, or important business relationship with, nor other vested interest in, NGK.</p> <p>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 FY2022, MUFG Bank's holdings did not exceed more than 2.31% 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 13 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, exists between NGK and the organizations with which he is or has been involved.</p>

We have submitted written notification to the Tokyo Stock Exchange and Nagoya Stock Exchange of the appointment as independent officers of the above five individuals.

Effectiveness of the Board of Directors

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

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, election/appointment, and dismissal. This is accomplished through deliberation of the nomination of each candidate for director and Audit & Supervisory Board member, and appointment and dismissal of representative directors and executive directors 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 executive directors, based on the report by the Nomination and Compensation Advisory Committee.

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. The Company 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

Evaluation on the effectiveness of the 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 to evaluate 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. The Company continually strives to improve effectiveness through such means as considering the importance and necessity of each issue identified and reinforcing efforts in Board of Directors meetings during the next fiscal year.

1. Status of Response to Issues Identified in the Effectiveness Evaluation Covering FY2021

(1) Deepen discussions at the Board of Directors meetings

- The Board of Directors held free debates on the review of business portfolio and personnel system, in addition to making company-wide risk management an agenda after making a sharp distinction among the agenda items.
- In addition, the energy storage business strategy was discussed intensively at the expansion strategy meeting, which was attended also by outside officers.

(2) Strengthen progress reports on the NGK Group Vision

- In addition to enhancing the content of reports on the progress of the Vision at various committee meetings and company-wide projects, we have also established multiple reporting periods for each of them as scheduled annual agenda items.

2-1. Methods of Effectiveness Evaluation for FY2022

- (1) A survey comprising a total of 50 questions and a free-response entry was conducted on all directors (9 members) and all Audit & Supervisory Board members (4 members) at the beginning of April 2023, and the analysis and evaluation of the responses were entrusted to an external organization.
- (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) since FY2022, and entrusted the analysis and evaluation of the responses to an external organization.

2-2. Summary of Evaluation Results for FY2022

- (1) A summary of the evaluation results was reported to the Board of Directors at its meeting on June 6, 2023.
- (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 has maintained the elements that form the foundation necessary as a Board of Directors since the previous evaluation, including the commitment and leadership of each member and a healthy culture. Based on the results of last year's effectiveness evaluation, we believe that the Board of Directors has taken actions such as holding focused discussions on themes to be supervised intensively, leading to a continuous high evaluation of its effectiveness.

- On the other hand, there seems to be an awareness of issues related to risk management based on the external environment, which is considered important for the realization of the long-term vision in the future; discussion and monitoring of human resource strategy and human capital, which are drawing attention as public trends; and the way information is shared with respect to communicating with investors and other stakeholders. In order to appropriately address these issues, it is expected that continuous efforts will be made in terms of management, such as the sharp distinction of agendas and operating time.
- With regard to the Nomination and Compensation Advisory Committee, the committee itself was evaluated as operating effectively, but there were some comments on how information is shared with the committee and how information is shared from the committee to the Board of Directors, suggesting that the expected level of information sharing needs to be confirmed.

3. Policy for Initiatives for FY2023 to Further Improve Effectiveness

Based on the results of the evaluation in FY2022 and the exchange of opinions with outside officers, we have formulated the following policies for initiatives for FY2023. 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 be regularly reported to and monitored by the Board of Directors.
 - 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
- More in-depth discussion on business strategy
- Enhance opportunities for dialog between senior management and outside officers
- Emphasize dialog with shareholders and investors through IR activities

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

- Further share the status of discussions from the committee to the Board of Directors
- Enhancement of information provided to the committee on compensation and nomination

Management 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.

Policy on Cross-Shareholdings

NGK holds shares in listed companies that contribute the long-term business development of the NGK Group as cross-shareholdings, primarily to maintain and strengthen transactional relationships. We also hold shares in each company in the Morimura Group, which shares a common founder. We hold these shares to mutually enhance management quality because the Morimura Group brand is part of NGK's corporate value through its philosophy and history. As part of our asset portfolio, all cross-shareholdings are positioned as assets to supplement the liquidity considered necessary for our business plans. We always keep shrinking the size of cross-shareholdings in mind from the perspective of asset efficiency, and the size of cross-shareholdings may change due to changes in overall business trends and risks, financial conditions, the transactional relationship with each company whose shares we hold, and other such factors.

The Board of Directors regularly reviews NGK's capital policy and whether it is appropriate to continue holding these shares based on certain indicators in addition to significance of holding shares from the perspective of the transactional relationship. Such indicators include the credit rating and other indicators of the safety in holding shares, and the dividend yield and other indicators of efficiency. With respect to the cost of capital, shareholdings are not evaluated in isolation. We also evaluate cross-shareholdings as part of the balance sheets for each business, which have different risks and anticipated rates of return, in managing the return on invested capital (NGK version ROIC) for each business.

When exercising voting rights on cross-shareholdings, we focus on whether the business is being managed with an emphasis on enhancement of corporate value, shareholder return, in addition to evaluation from the perspective of the content of resolutions and whether they will adversely affect shareholder return. We appropriately disclose the business relationships we have with the companies behind the stocks we hold in our annual securities report.

Number of Stocks and Balance Sheet Amount

	Number of stocks	Total balance sheet amount (million yen)
Unlisted shares	39	2,168
Shares other than unlisted shares	38	37,852

Stocks for Which Number of Shares Increased in FY2022

	Number of stocks	Total acquisition amount for increase in number of shares (million yen)	Reason for increase in number of shares
Unlisted shares	2	99	Due to new investments in companies contributing to the creation of our new products and businesses
Shares other than unlisted shares	—	—	—

Stocks for Which Number of Shares Decreased in FY2022

	Number of stocks	Total acquisition amount for decrease in number of shares (million yen)
Unlisted shares	—	—
Shares other than unlisted shares	2	1,180

Sustainability

Auditing Status

[Audit & Supervisory Board Audits ▾](#)[Internal Audits ▾](#)[Accounting Audits ▾](#)

Audit & Supervisory Board Audits

Each Audit & Supervisory Board member is responsible for providing an independent perspective on the job performance of directors and the accounting auditor, as well as for sharing information, including the results of audits performed by the full-time Audit & Supervisory Board members, with the other Audit & Supervisory Board members in order to help ensure auditing is both efficient and highly effective.

In FY2022, the Audit & Supervisory Board met 14 times for around 1.25 hours each time. The following items were addressed as auditing priorities in FY2022.

1. (1) NGK Group Vision
 - (1)-1 The status of ESG-related initiative penetration
 - (1)-2 The progress of new business, business restructuring, etc.
 - (1)-3 Business-specific risk awareness and reasonableness of the management decision-making process.
2. (2) Confirm framework for handling risk management and readiness to face future changes

Audit & Supervisory Board members attend Board of Directors meetings, audit the meeting procedures and the content of resolutions, and express their opinions where necessary. At hearings convened by Audit & Supervisory Board members and outside directors, Audit & Supervisory Board members hear from and discuss with group executives of each business group and directors in charge of each department concerning the budget details, business conditions, the status of risk management, the legal compliance system and other matters, and seek to coordinate with outside directors. When necessary, Audit & Supervisory Board members also conduct onsite audits and use other means to hear from and exchange opinions with directors, other corporate officers, and people in charge of each department, as well as directors and others at subsidiaries regarding business conditions, the status of risk management, and legal compliance. Moreover, outside Audit & Supervisory Board members attend the Business Ethics Committee and participate in discussion on preventing inappropriate and illegal conduct by our officers and other employees, addressing competition laws and laws in other countries designed to prevent corruption, and reports related to hotline operation. Outside Audit & Supervisory Board member Masayoshi Sakaguchi also attends the Nomination and Compensation Advisory Committee as an observer to verify that discussions concerning pay and appointment of board members, auditors, and executive officers are properly carried out, including personnel items relating to directors and Audit & Supervisory Board members, items related to the remuneration of directors and officers, and the like.

In addition to the above, the full-time Audit & Supervisory Board members attended important meetings and committee meetings such as the Executive Committee, ESG Management Committee, Compliance Committee, and Internal Control Committee, to confirm the business execution decision-making process, status of management, and other factors. They also held meetings with the representative directors every six months to share audit results and exchange opinions. In addition to this, the full-time Audit & Supervisory Board members have selected overseas subsidiaries for corporate group audits based on the importance and the approach on risks, and conducted on-site audits for eight overseas subsidiaries. Meetings with the Audit & Supervisory Board members of major companies among domestic subsidiaries were conducted twice a year, with on-site audits to two domestic subsidiaries. Two meetings were also held during the year for the Audit & Supervisory Board members, auditors, and others responsible for audits at other domestic subsidiaries and subsidiaries in China and South Korea.

The full-time Audit & Supervisory Board members inspected important approval documents and other relevant documents, confirmed the results of internal audits by the Auditing Department, obtained information from divisions in charge of separate audits in the areas of safety, environment, and quality, and heard the audit findings from the accounting auditor concerning the internal controls audit of financial reports. They accompanied the accounting auditor to physical inventory checks to investigate the status of property. The full-time auditors also shared the details of these auditing activities with outside Audit & Supervisory Board members as necessary, through Audit & Supervisory Board meetings and other means.

Internal Audits

The Auditing Department (16 members: as of March 31, 2023) 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 is any grounds for dismissal of financial auditors, as per the Companies Act. Based on the results of this confirmation, the Company selected Deloitte Touche Tohmatsu LLC as the 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.

Compensation for Directors and Audit & Supervisory Board Members

Alignment of Officer Compensation with Long-term Performance

Policies for Determining Compensation of Directors

The compensation system for directors (excluding outside directors) and executive officers 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.

The compensation of directors (excluding outside directors) and executive officers consists of the following three components: basic compensation, which is a fixed annual amount in accordance with their position; a performance-linked bonus that varies depending on business performance each fiscal year; and stock-related compensation. This system is designed to raise director sensitivity toward the Company’s stock price, share with shareholders not only the benefits of a rise in the stock price but also the risks associated with a fall in the stock price, and motivate directors and corporate officers to enhance corporate value over the medium-to-long-term through appropriate corporate management.

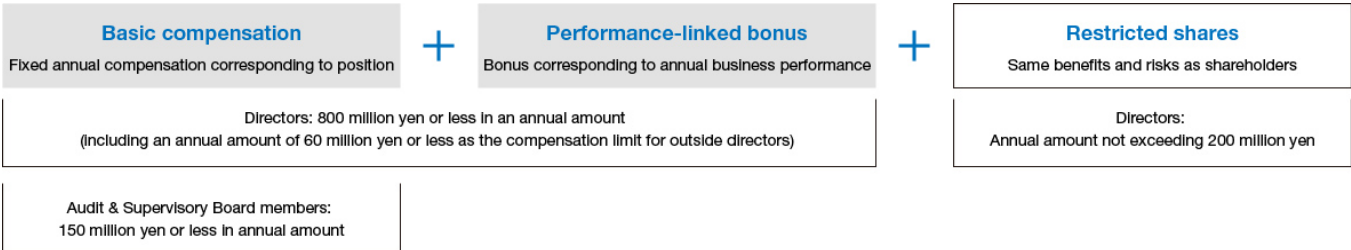
NGK only pays fixed annual compensation to outside directors and Audit & Supervisory Board members. We do not pay them performance-linked bonuses and stock-based compensation by granting restricted shares.

The relative proportions of variable compensation and fixed annual compensation are determined from the perspective of focusing on stability and improvement in performance over the medium and long term. Total variable compensation consists of a performance-linked bonus and the cash conversion value of restricted shares granted. It is set at an appropriate percentage of total compensation. The total amount of compensation, including basic compensation, is set according to the position and rank of the recipient. It is also taking into consideration the level of compensation according to the size of the company, which is based on data from a reliable external organization.

The Nomination and Compensation Advisory Committee consists of a majority of independent outside directors. At the request of the Board of Directors, the committee deliberates on the policies and procedures for determining compensation. The committee deliberates on and proposes the range of compensation for all directors and Audit & Supervisory Board members, basic compensation, and the basic amounts used as the basis for calculating performance-linked bonuses, and the number of restricted shares to grant (the level of monetary claims for payment as compensation for restricted shares granted) according to the position and rank of each individual director and executive officer; and deliberates and proposes the amount of the performance-linked bonus for each individual director. The committee then reports its decisions on these matters to the Board of Directors.

The Board of Directors determines the amounts of compensation for directors and corporate officers after sufficient consideration of the recommendations received from the Nomination and Compensation Advisory Committee, as described above.

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



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 perform-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)	
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

* NGK resolved at the General Meeting of Shareholders held on June 28, 2021 that the amount of compensation to directors (excluding outside directors) in the form of stock compensation-type stock options shall not exceed 200 million yen per year (number of directors (excluding outside directors) at the time of the resolution was six). However, at the General Meeting of Shareholders held on June 27, 2022, it was resolved to abolish the stock compensation-type stock option plan, except for those already granted, and to introduce a restricted share compensation plan in its place.

Performance-linked bonus calculation method (FY2023)

The following indicators are used in calculating the performance-linked bonus.

Short-term perspective	<ul style="list-style-type: none"> Consolidated performance indicator for FY2023: Net sales, operating income, net income, and return on invested capital (ROIC)* (target at the beginning of (or during) the fiscal year and results) Consolidated performance results for FY2022: Net sales, operating income, and net income
Medium to long-term perspective	<ul style="list-style-type: none"> Medium and long-term performance targets established in the NGK Group Vision: Operating income Creation of new products and new businesses—Keep Up 30 Initiatives to Reduce CO₂ Emissions

* NGK version ROIC is calculated based on operating income, sales receivables, inventories, and fixed assets.

Distribution ratio of performance-linked bonuses by item and performance evaluation index (excluding personal evaluations)

Item	Distribution Ratio	Evaluation Factor Change Ratio	Performance Evaluation Index
Short-term indicators	40%	-100% to +100%	Consolidated performance (net sales, operating income and net income): — Results in the previous fiscal year — Results in the current fiscal year
		-100% to +100%	Return on invested capital: — Initial targets — Results in the current fiscal year
Medium- to long-term indicators	60%	-100% to +100%	Medium- to long-term performance targets (operating income): — Targets by years passed toward the 2025 target — Results in the current fiscal year
		-100% to +100%	Level of achievement for key issues (creation of new products and businesses—Keep Up 30 and CO ₂ emission reduction initiatives, etc.)

Non-monetary Compensation etc.

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.

NGK revised the officer compensation system at a meeting of the Board of Directors held on April 28, 2022. At the 156th Ordinary General Meeting of Shareholders held on June 27, 2022, it was resolved to abolish the stock compensation-type stock option plan, except for those already granted, and to introduce a restricted share compensation plan in its place. An overview of the restricted share compensation we granted in FY2023 is as below.

Overview of Restricted Share Compensation	
Class and number of shares to be issued	The Company's common stock: 127,000 shares
Issue price	1,714 yen per share
Aggregate issue amount	217,678,000 yen
Persons eligible for the allotment of the shares and the number thereof, as well as the number of shares to be allotted	<p>The Company's directors (excluding outside directors):</p> <p>6 persons, 43,000 shares</p> <p>executive officers who do not concurrently serve as the Company's directors:</p> <p>24 persons, 84,000 shares</p> <p>(excluding executive officers who are overseas residents on a non-temporary basis)</p>

* 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 the Company'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 the Company's Board of Directors from among the positions of the Company'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 (FY2022)

Director category	Total compensation (million yen)	Total compensation by type (million yen)				Applicable officers (people)
		Fixed Compensation	Performance-linked compensation	Restricted share compensation	Stock compensation-type stock options	
Directors (excluding Outside Directors)	539	301	161	58	18	7
Outside Directors	42	42	-	-	-	3
Audit & Supervisory Board Members (excluding Outside Audit & Supervisory Board Members)	69	69	-	-	-	2
Outside Audit & Supervisory Board Member	28	28	-	-	-	3

Notes: 1. The total amount of compensation for directors (excluding outside directors), the total amount of compensation by type, and the number of applicable officers noted above include one director who resigned from his position on June 27, 2022 and the amount of compensation he received.

2. The total amount of compensation for outside Audit & Supervisory Board members, the total amount of compensation by type, and the number of applicable officers noted above include one outside Audit & Supervisory Board member who resigned from his position on June 27, 2022 and the amount of compensation he received.

3. At the 156th Ordinary General Meeting of Shareholders held on June 27, 2022, it was resolved to abolish the stock compensation-type stock option plan, except for those already granted, and to introduce a restricted share compensation plan in its place. Accordingly, we did not grant new stock options in FY2022. However, we have stated the amount of compensation recorded as expenses in FY2022 for those stock options we granted in the past fiscal year.

Officers receiving total compensation of ¥100 Million or More (FY2022)

Name	Officers category	Company category	Total compensation by type (million yen)				Total compensation (million yen)
			Fixed compensation	Performance-linked compensation	Restricted share compensation	Stock compensation-type stock options	
Taku Oshima	Director	Submitting company	67	40	13	4	125
Shigeru Kobayashi	Director	Submitting company	67	40	13	4	125

Average Employee Compensation and President Compensation

At NGK, the compensation for the President was 15.2 times that of the average employee compensation in FY2022.

(FY2022)

President compensation: 125,000,000 yen

Average employee compensation: 8,240,174 yen

Sustainability

Communication with Shareholders

[Open General Meeting of Shareholders ▾](#)[Two-Way Communication ▾](#)[Returning Profits to Shareholders ▾](#)

Open General Meeting of Shareholders

NGK endeavors to hold open General Meeting of Shareholders where its shareholders feel welcome to attend. At these meetings every year, we introduce NGK corporate activities with booths showcasing the company and displaying products explained by NGK staff.

We are also making efforts to expand General Meeting of Shareholders-related information, including the following:

① Mailing convocation notice in advance	Sent 19 days prior to the meeting date
② Disclosing information on the website in advance	Announced four business days before convocation notice is sent out (since FY2018)
③ Taking part in the Tokyo Stock Exchange Electronic Voting Platform*	Online voting system made available
④ Posting General Meeting of Shareholders documents on the website	Convocation notices (Japanese/English), results of vote execution, notices of resolution, extraordinary reports published on website Annual Shareholders' Meeting https://www.ngk-insulators.com/en/ir/meeting/

* An electronic voting system operated by Tokyo Stock Exchange. It allows shareholders to vote not only through the conventional printed materials but also online, making the process more convenient for shareholders in Japan and overseas.

Two-Way Communication

In addition to regular presentations held in Japan and overseas, the NGK Group conducts one-on-one meetings and participates in interviews among other ongoing initiatives to expand dialogue with institutional investors. NGK senior management also visits and conducts one-on-one discussions with institutional investors in Japan and overseas.

Activities in FY2022

Activities	Details
Japan	Senior management conducted presentations for analysts and institutional investors twice. They also conducted one-on-one meetings and participated in onsite interviews.
Overseas	Senior management conducted overseas IR meetings targeting analysts and institutional investors twice.
Online IR Library	Included financial reporting information, the timely disclosure of non-financial reporting information, securities reports, annual reports, NGK Report, NGK Group Sustainability Website Data, General Meeting of Shareholders documents, and other information.

[> Investor Relations](#)

Participation in Nomura IR Asset Management Fair

To familiarize individual investors with the details of NGK business and performance, we took part in the Nomura IR Asset Management Fair 2023 (hosted by Nomura Investor Relations Co., Ltd. and cosponsored by Nomura Securities Co., Ltd.).

A total of 72 listed companies and investment firms participated in this year's event, which similar to 2022 was held online in order to prevent the spread of COVID-19.

At our virtual booth we used corporate introduction videos, company guides, NGK reports, and other materials to provide participants with a detailed overview of our company and financial data.



A company representative gives an easy-to-understand online introduction to NGK

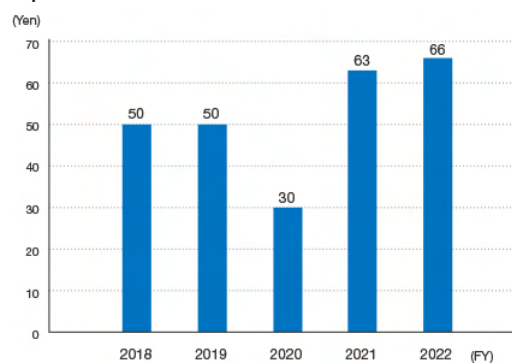
Returning Profits to Shareholders

At NGK, returning profits to shareholders is considered one of management's top priorities. As a basic policy, we aim for management that focuses on shareholders and ROE. We share profits while comprehensively taking account of our business performance, financial structure, and future business development. Our medium-term benchmark for the consolidated payout ratio is around 30%.

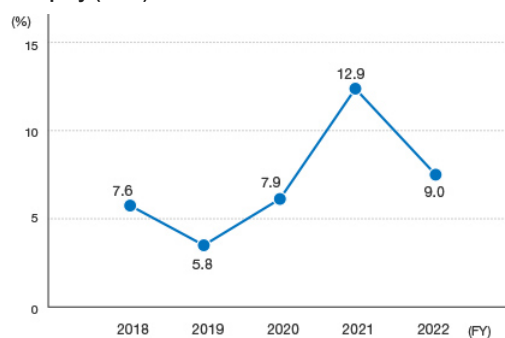
In fiscal 2022, we paid an annual dividend of 66 yen, and the consolidated payout ratio stood at 37.2%.

Looking ahead, we will balance profitability above capital cost with maintaining financial soundness, while proactively returning profits to our shareholders from a medium-to long-term perspective.

Dividends per Share



Return on Equity (ROE)



[> Dividend Information](#)

Sustainability

Compliance Promotion Structure

[NGK Group Corporate Business Principles](#) ▾[NGK Group Basic Guidelines for Compliance Activities](#) ▾[Compliance Promotion Structure](#) ▾[Whistleblowing System](#) ▾

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 August 2023.

NGK Group Corporate Business
Principles



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 company. They also receive job grade-specific training and other instruction.

Non-Compliance Incident Reports

In FY2022, there were no incidents of serious legal non-compliance in the NGK Group.

Examples of Legal Violations

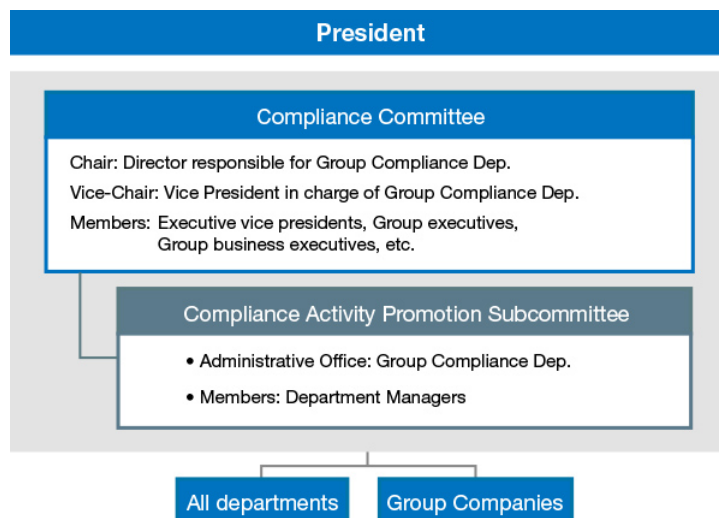
[> Governance Data Collection](#)

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, 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.



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

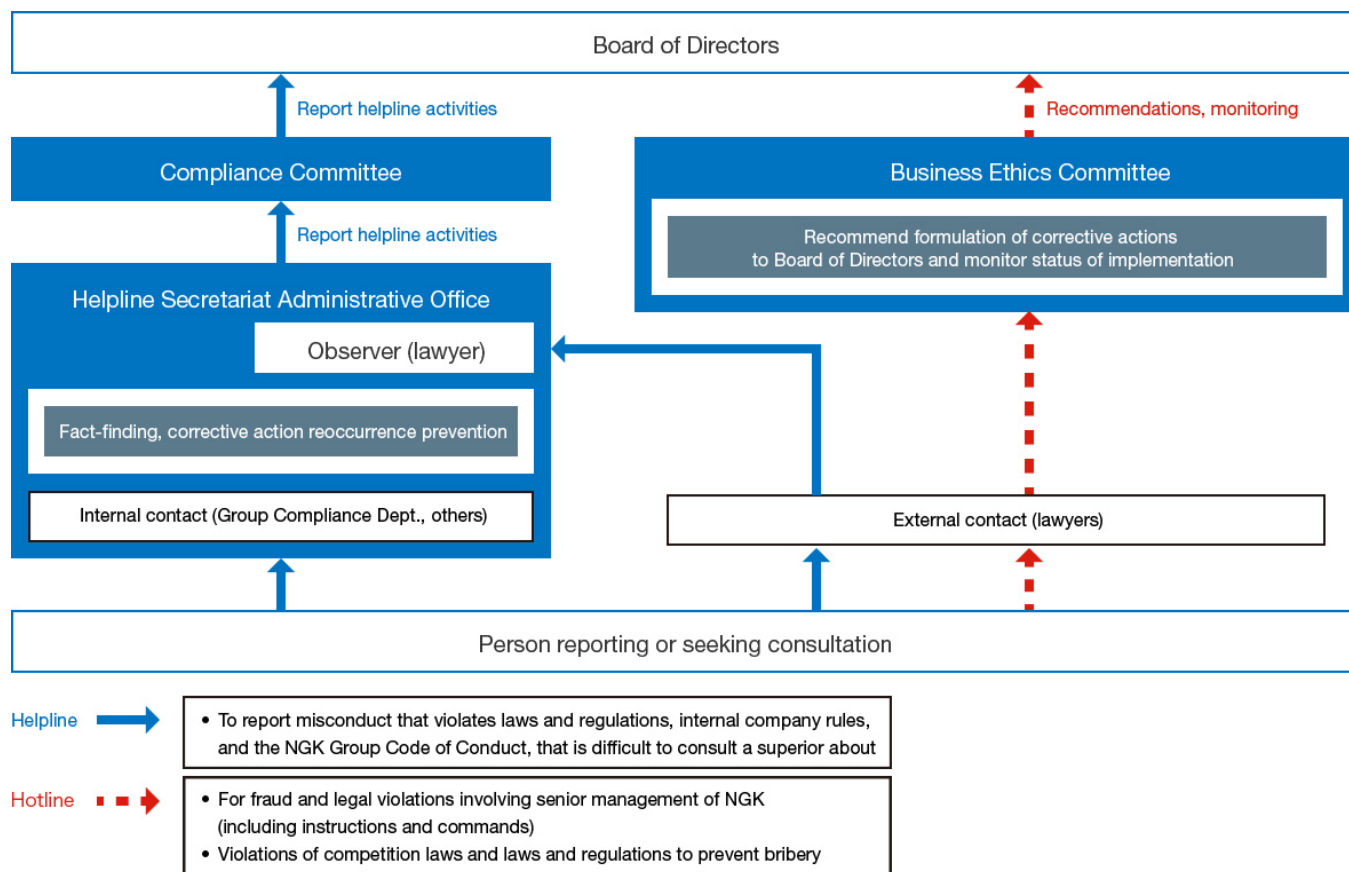
Mission Achievement-Focused Initiatives of FY2022

- At the beginning of the year, the president shares a message about compliance being our top priority (continued from previous years)
- Promoting awareness of NGK Group 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: Adapt to revision of the Whistleblower Protection Act, Outside Japan: Adapt to EU Directive on the Protection of Whistleblowers)

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, these should be directed to a designated agent, but it is also possible to seek consultation anonymously through an outside hotline. Our company rules guarantee protection of those seeking advice or reporting issues. We have also revised the company rules and established a structure to align with enforcement of the revised Whistleblower Protection Act.

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. These helplines receive requests for consultation on a variety of issues, including harassment, rule violations, and quality issues.

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 FY2022, this training included examples of fraudulent conduct, in addition to power harassment and sexual harassment.

Number of Helpline Consultation Cases

> [Governance Data Collection](#)

In FY2022, there were a total of 38 reports and consultations. There were 22 concerning harassment, 7 concerning the personnel system and work regulations, 5 concerning rules and regulations, and 4 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.

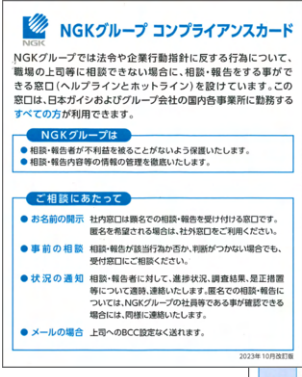
Hotline

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 continue to set up hotlines at Group companies outside Japan to respond to fraud and legal infractions committed by senior management, while taking the circumstances in each country into consideration. All Group companies outside Japan have set up hotlines for matters related to competition laws and anti-corruption law-related violations.

Compliance Card

To ensure thorough awareness of the whistleblowing system, we created a Compliance Card that employees could keep with them at all times, 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

- **お名前のお示し** 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、受付窓口にて相談ください。
- **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** 上項へのBCC設定なく送れます。

2023年10月現在版

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。（※お名前をご記入します）

- 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	
52-72-8855 平日 8:30~18:30 休日 9:00~17:00 ※自動音声案内に接続	不正・法令違反 人事制度 セクハラ・パワハラ	グループコンプライアンス部 人材統括部① 人材統括部②	hi-gr@ngk.co.jp
	いずれの相談内容も可	中経経営 法律事務所	hi-galbu@djune.ocn.ne.jp

①②には女性専用ダイヤルも設置しています。

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
- 贈賄等の買収防止法令違反に関する行為

受付窓口		E-mail	
052-872-8855 （内線19-20-28855） ※自動音声案内に接続	平日 16:00~17:00 中経経営 法律事務所	hi-galbu	@djune.ocn.ne.jp

Sustainability

Compliance Initiatives

[Compliance with Competition Laws](#)[Import/Export Transaction Management](#)[Anti-Harassment Measures](#)[Compliance Education](#)

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, 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. The Competition Laws Compliance Handbook was revised in FY2021 to accommodate changes in social conditions.

Strengthening Our Compliance System in Relation to Competition Laws

Year conducted	Regulation development	Creation of internal systems	Education
FY1997	<ul style="list-style-type: none"> Formulated guidebook and briefing document for the Anti-Monopoly Act 	<ul style="list-style-type: none"> Required each headquarters to submit a Compliance Status Report on the Anti-Monopoly Act 	<ul style="list-style-type: none"> Lectures on the Anti-Monopoly Act by outside instructors (lawyers) (subsequently held annually)
FY2011	<ul style="list-style-type: none"> Formulated Competition Laws Compliance Rules 		
FY2012	<ul style="list-style-type: none"> Created and distributed the Competition Laws Compliance Handbook Created and distributed an Appendix to the Competition Laws Compliance Handbook 	<ul style="list-style-type: none"> Established an independent committee 	<ul style="list-style-type: none"> In-house training led by Legal Department staff Lectures by local lawyers held at Group companies outside Japan
FY2013			<ul style="list-style-type: none"> Conducted briefing on the Competition Laws Compliance Handbook Invited U.S. lawyers to lecture on competition laws
FY2014	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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)

Year conducted	Regulation development	Creation of internal systems	Education
FY2015	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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
FY2016	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Created an operating manual for database used to document competition law compliance 	<ul style="list-style-type: none"> Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws at beginning of term 	<ul style="list-style-type: none"> Online seminars provided to 861 employees in Japan
FY2018	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws at beginning of term* 	<ul style="list-style-type: none"> 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.*
FY2019	<ul style="list-style-type: none"> Revised Competition Laws Compliance Rules at NGK Electronics Devices, Inc. to strengthen that subsidiary's competition laws compliance system 	<ul style="list-style-type: none"> Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws at beginning of term* 	<ul style="list-style-type: none"> 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)

Year conducted	Regulation development	Creation of internal systems	Education
FY2020	<ul style="list-style-type: none"> Established the Competition Laws Compliance Activities Portal Site 	<ul style="list-style-type: none"> Top management of headquarters, business groups, and Group companies provided notifications about compliance with competition laws* 	<ul style="list-style-type: none"> 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*
FY2021	<ul style="list-style-type: none"> Revised the Competition Laws Compliance Handbook 		<ul style="list-style-type: none"> Conducted comprehensive education for all NGK directors and general managers on handling company violations of competition laws
FY2022		<ul style="list-style-type: none"> Added the Corporate NV Creation as the headquarters responsible for things such as implementing a competition law compliance program 	<ul style="list-style-type: none"> Conducted all-inclusive training for managers in sales positions at NGK about handling violations of competition laws at NGK

* These items continue every year

Third-party Review of Competition Law Compliance Program

Since FY2015, NGK has contracted PwC Advisory LLC (PwC) as a compliance specialist to review the operation of our competition law 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 law compliance program.

Instances of Anticompetitive Behavior

In FY2022, no instances of anticompetitive behavior were observed within the NGK Group.

Instances of Anticompetitive Behavior

[> Governance Data Collection](#)

Import/Export Transaction Management

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

As part of its full compliance efforts, NGK is engaged in strictly observing and enforcing laws and regulations related to import and export 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 imports and exports; 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 imports and exports 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 imports and exports.

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 FY2022 these meetings were held not only in-person, but via web conferencing and newsletters. The meetings were held a total of 32 times, with 518 employees in attendance.

Anti-Harassment Measures

We conduct annual position-based training as part of our measures to combat harassment in the workplace. In FY2022, based on the responses to our compliance awareness survey conducted in FY2021, we also began training on harassment from a position of power, which targeted executives at Group companies in Japan, and employed a group discussion format utilizing specific case studies (178 participants at 6 locations from 3 companies). In addition, we created self-study materials based on recordings of this training which require trainees to identify what points constitute harassment from a position of power, and distributed these within NGK (341 participants). We continue working to prevent harassment before it occurs and improve the workplace environment by providing more effective training content.

Number of Position-based Anti-Harassment Training Sessions

Number of participants in position-based harassment training

[> Governance Data Collection](#)

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 FY2022 (Overall)

Name	Target	Content	Instruction Format	Number of sessions
Career education	New hires	Compliance basics, competition laws, anti-bribery regulations for dealing with foreign officials	Training by an in-house instructor	1
	Promoted or career-change employees	Compliance basics	Video presentation	1
	Mid-career hires	Compliance basics, competition laws, anti-bribery regulations for dealing with foreign officials	Video presentation	1
	Newly appointed supervisors	General compliance, competition laws, anti-bribery regulations, quality compliance, contract observance, security export control	Video presentation	1
	Newly appointed managers	General compliance, competition laws, anti-bribery regulations, quality compliance, contract observance, security export control	Video presentation	1
	Managers promoted to second grade	Compliance (including quality compliance)	Video presentation	1

Name	Target	Content	Instruction Format	Number of sessions
Training for employees scheduled for postings abroad (global training)	Employees scheduled for postings abroad	Competition laws, anti-bribery regulations, security export control	Video presentation	1
Compliance education	Managers and sales staff of Group companies outside Japan	Compliance basics, competition laws, anti-bribery regulations for dealing with foreign officials	Lectures provided by lawyers and paper materials-based in-house training	19 (24 sites)
	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 public officials	Lawyer-led seminar	4
	Executive officers	Competition laws	Lawyer-led seminar	2
	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	Video presentation	1
	Executive officers and general managers	Oral training on competition law	Seminar by executive officer or General Manager of Group Compliance Department	4
Laws and Compliance Seminars	Managers and other targets depending on content	May Export controls for technical information	Video presentation (in-house instructor)	1
		July Electronic contracts	Video presentation (in-house instructor)	1
		September Latest trends in insider trading regulations	Video presentation (in-house instructor)	1
		November Latest trends in anti-bribery regulations	Video presentation (outside lawyer)	1
		January Handling revisions to the Electronic Books Maintenance Act	Video presentation (in-house instructor)	1
		March Act on the Protection of Personal Information - Explanation of revised law and our company's response -	Video presentation (in-house instructor)	1
Other training	Directors and managers of NGK and Group companies in Japan	Quality compliance seminar "Thorough Quality Compliance" - Reviewing NGK inspection non-conformities -	Training by executive officers	1
	Business groups and Group companies in Japan	Competition laws, anti-bribery regulations, Subcontract Act	Training by an in-house instructor	5

Competition Law Education Conducted in FY2022

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

Anti-Bribery Training Conducted in FY2022

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 public officials	1
Legal Compliance Seminars	Managers of NGK	Anti-bribery regulations for dealing with foreign public officials	1
Compliance education	Managers and sales staff of Group companies outside Japan	Outside lawyer-led live seminar and online seminar; seminar conducted by an internal lecturer; conducted using paper-based resources	19 (24 sites)

Other Dissemination Activities

We post the Compliance Newsletter on the company's intranet once a month. The Newsletter features a four-frame cartoon that explores familiar themes followed by detailed explanations of what we can learn from these examples.

In FY2017, we began making October the annual compliance strengthening month, during which we do things such as put up educational posters and inform employees about the whistleblowing system.

In FY2021, we trialed a Compliance Activities Award System and have begun to put it into practice from FY2022. In FY2022 we presented Energy Support Corporation with an award for its activities to foster openness and greater understanding of its corporate philosophy. The chairman of the Compliance Committee presented a certificate of commendation and held a discussion meeting for the members promoting these activities. We will continue to give awards for compliance activities, from each department and Group companies, that are particularly independent and original. They are then publicized throughout the NGK Group as good examples.

コンプライアンス便り Vol.82

今回のテーマ：パワハラに当たる行為とは



パワハラの加害者にならないためには「相手の気持ちを考える」ことが大切です。

パワハラとは、「組織において行われる①懲罰的な関係を背景とした言動であって、②業務上必要かつ相当な範囲を超えたものであり、③労働者の就業環境が害されるものであり、④から③までの要素を全て満たすもの」のことです。

上に挙げたものは、パワハラの中でも代表的な例であり、「パワハラの種類」と呼ばれるものです。組織でこのような言動をしていないかを確認してください。

労働施策総合推進法では、パワハラを防止するために、労働者は「関心と理解を深め、他の労働者に対する言動にも必要な注意を払うとともに、事業主の選する場面に協力するように努めなければならない」としています。そのためには、どのような行為がパワハラに当たるのかを、知っておかなければなりません。今回は、「パワハラの種類」「パワハラをしないためにはどうすればよいのか」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 FY2022

April	Are you prepared to protect yourself from earthquakes?
May	Avoiding speech and conduct that hurt LGBT people
June	When you receive an invoice by email
July	What to do if you witness fraud
August	Will what I share with the consultation hotline stay secret?
September	If you are harassed or witness harassment in the workplace
October	Compliance strengthening month
November	What happens if you use undisclosed information when trading stocks
December	Human rights week
January	When carrying your work computer or smartphone with you
February	The importance of “Ho-Ren-So” (reporting, contacting, and consultation)
March	What constitutes harassment from a position of power

Sustainability

Corruption Prevention Structure

[Basic Approach](#) ▾[Corruption Prevention Structure](#) ▾[Responsible Political Involvement](#) ▾

Basic Approach

The NGK Group endorses the UN Global Compact (UNGC) and abides by the principle that businesses should work against corruption in all its forms, including extortion and bribery.

The NGK group conducts fair and transparent transactions, in accordance with our pledge to undertake business activities with common sense and based on strict compliance and ethics, as stipulated in the NGK Group Corporate Business Principles.

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.

In FY2015, NGK formulated Rules for the Anti-Bribery of Public Officials 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 via third parties. In principle, these regulations also prohibit payments to public officials for the purpose of facilitating business procedures (facilitation payments), and stipulate items for future risk assessments. The Group Compliance Department can appoint a person in-charge of collecting information about trends in compliance issues related to relevant laws and regulations in the markets and industries where the NGK Group conducts business. The appointed person will then be responsible for ascertaining new problems that come to light in our operations, and collecting information on industry trends. If they identify any trends requiring special mention, this person will report them to the Manager of the Group Compliance Department, and if deemed necessary, will determine a suitable response in consultation with the Business Ethics Committee. If we receive a report of violation or possible violation of relevant laws or regulations for the Rules for the Anti-Bribery of Public Officials, we investigate and examine the facts with the advice of external experts (lawyers, etc.), and determine the appropriate response. Our Auditing Department has also been reviewing overseas remittances and entertainment expenses since FY2017.

Moreover, we distribute the NGK Group's Supply-Chain CSR Guidelines to our suppliers, and require that they understand them and agree to not engage in bribery. In accordance with the section on preventing corruption, bribery includes unlawful donations, payment, prices, or financial or non-financial benefits or other gifts to any stakeholders for the purposes of unfair profit, or the acquisition or maintenance of preferential treatment.

 [NGK Group's Supply-Chain CSR Guidelines \(English\)\(PDF:141KB\)](#)

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. We also arrange attorney-led seminars and other training at all Group companies.

Corruption and Bribery Incidents

In FY2022, there were no confirmed incidents of corruption or bribery in the NGK Group.

Incidents of Corruption or Bribery

[> Governance Data Collection](#)

| 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.

Sustainability

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, 2022)

(billions of yen)

	Amount of Tax Paid
Japan	4.03
USA	2.91
China	2.08
Germany	0.67
Mexico	0.45
Poland	0.19
Australia	0.12
Others	0.07
Total	10.51

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

Risk Management

[Risk Governance](#) | [Business Continuity Plan \(BCP\) Initiatives](#)

Risk Governance

Basic Approach

The NGK Group addresses the issue of serious risk by empowering various committees to facilitate risk avoidance and prevention, in accordance with the Basic Rules of Crisis Management. Additionally, in the event of some particularly significant risk, the Vice President responsible for the Corporate Planning Office can call a meeting, which would include the president, to develop countermeasures.

In times of increasing socio-economic uncertainty, it is important to have a heightened awareness of risk and to act before risks turn into crises. Therefore, we have established a system whereby the Compliance Committee, Environment, Safety & Health Committee, Quality Committee, HR Committee, and Disaster Prevention and Control Headquarters constantly manage risks while also enabling prompt actions under top management when risks escalate. In FY2022, we examined building a company-wide risk management system. Starting from FY2023, we have newly established the Risk Management Committee to comprehensively handle the Group's risk issues. We have also stipulated that the Risk Management Committee should report on its activities to the Board of Directors at least once a year.

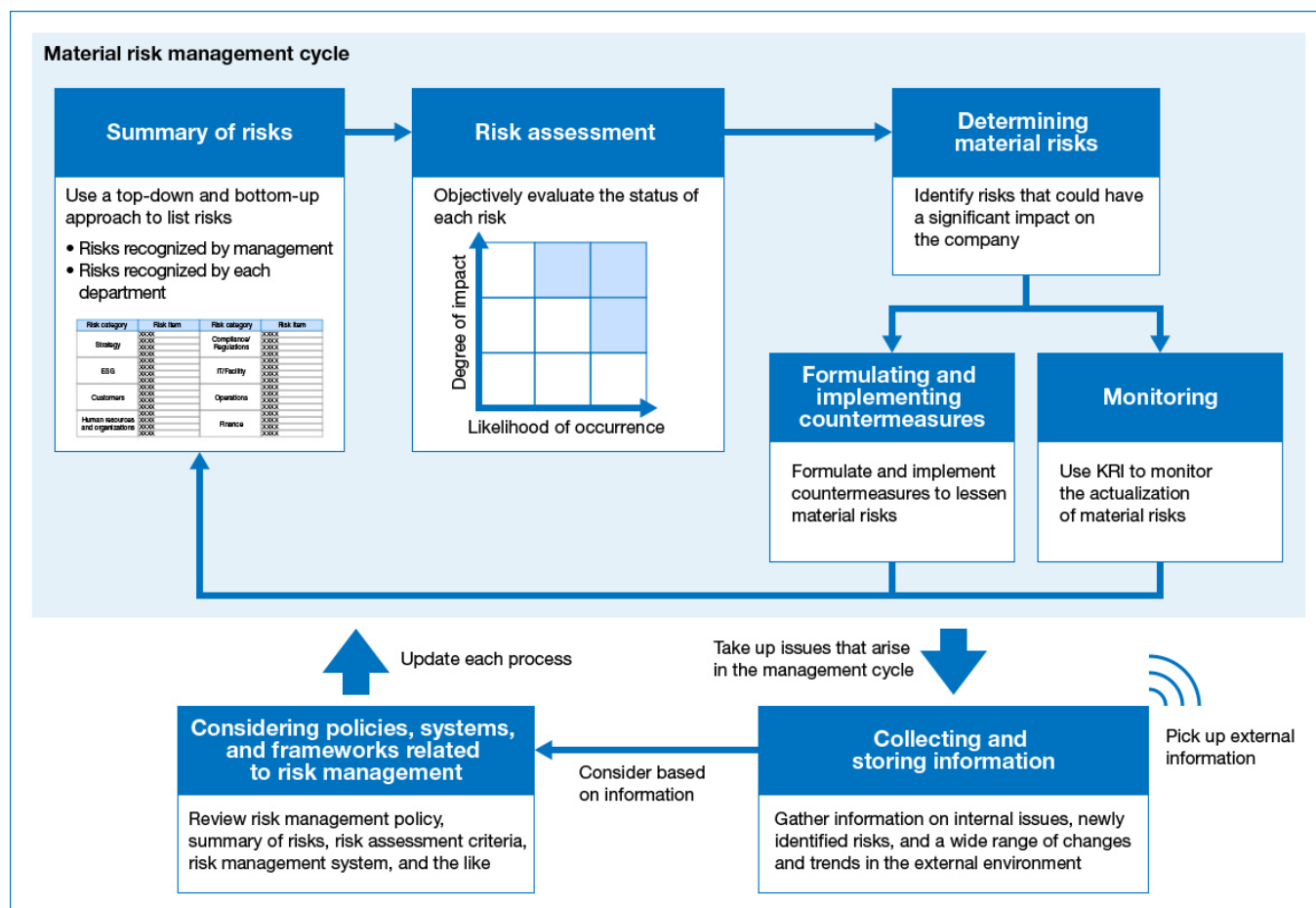
Risk Management Framework



Risk Identification Process

All risks discovered through the standard risk management process, which have the potential to affect the operational or financial situation of the Group are collected, reevaluated, and serious risks were identified in FY2019. The ESG Committee (former name in 2019) then deliberated and designated which identified risks need to be managed by the Group as a whole.

In FY2023, we will strengthen the sustainability of our overall management with the risk management process. This includes conducting risk analysis and assessment based on changes in the internal and external environment, identifying material risks to be managed, and implementing measures and monitoring the progress in addressing these risks under the Risk Management Committee.



Risks, Risk Summaries, Risk Responses

Risks	Summary	Response
1. Business operation risks	All operations	
	<ul style="list-style-type: none"> — Demonstrations, terrorism, war, infectious or communicable disease, and other unforeseen matters 	<ul style="list-style-type: none"> — Construct globally distributed, alternative systems
	(1) Environment Business	
	<ul style="list-style-type: none"> — Changes linked to decline in demand for internal combustion engine vehicles 	<ul style="list-style-type: none"> — Develop and launch new and high-performance products in line with stronger exhaust regulations
	<ul style="list-style-type: none"> — Drop in market share due to rising competition from Chinese market 	<ul style="list-style-type: none"> — Strengthen competitiveness via technical responsiveness that anticipates environmental regulations, and via capacity to ensure supply stability
	<ul style="list-style-type: none"> — Decline in demand due to downturn in business, delayed timing of regulations, or other factors 	<ul style="list-style-type: none"> — Respond appropriately to the content and timing of environmental regulations and trends in demand
	(2) Digital Society Business	
	<ul style="list-style-type: none"> — Greater than expected decline in semiconductor demand — Export regulations in each country 	<ul style="list-style-type: none"> — 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
	<ul style="list-style-type: none"> — Drop in market share due to delayed responsiveness to customer needs 	<ul style="list-style-type: none"> — Improve our unique product responsiveness and product supply capacity

Risks	Summary	Response
1. Business operation risks	<ul style="list-style-type: none"> Significant changes in semiconductor manufacturing process due to innovative invention 	<ul style="list-style-type: none"> Carefully monitor semiconductor manufacturing process trends and revise production systems where appropriate to ensure quick response to changes in demand
	<ul style="list-style-type: none"> Decreased demand for final consumer goods Decreased investment in portable base stations and data centers 	<ul style="list-style-type: none"> Carefully monitor customer trends and review personnel and production systems where appropriate to ensure quick response to changes in demand
	<ul style="list-style-type: none"> Inability to develop new technology or release products in response to customer needs 	<ul style="list-style-type: none"> Carefully monitor customer trends and pursue timely technological development
	(3) Energy & Industry Business	
	<ul style="list-style-type: none"> Spread of competitors' products, such as lithium-ion batteries, that use innovative technologies 	<ul style="list-style-type: none"> Promote the appeal of NAS batteries with their points of superiority (large capacity and long life) Strengthen partnerships with leading overseas companies Utilize government support measures
	<ul style="list-style-type: none"> Changes in the energy policies of each country Capital investment cutbacks by electric power companies Adoption of polymer insulators in the Japanese market 	<ul style="list-style-type: none"> Carefully monitor energy policy trends in each country and revise production systems where appropriate to ensure quick response to changes in demand
	<ul style="list-style-type: none"> Drop in market share due to growth of competition in kilns for lithium-ion battery cathode materials and electronic components 	<ul style="list-style-type: none"> Carefully monitor customer trends and pursue production system innovation where appropriate to ensure quick response to changes in demand
2. R&D-related risks	<ul style="list-style-type: none"> Inability to achieve adequate results with the input received due to increasingly complicated technological competition 	<ul style="list-style-type: none"> 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 Establish a new Corporate NV Creation based primarily on marketing
3. Legal compliance, human rights and safety, and quality-related risks	(1) Legal compliance-related risks	
	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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

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' " @ [U ` V & a d] U b W z \ i a U b ' f [\ l g ' U b X ' g U Z Y m z U b X ' e i U] m f Y U H X ' f j g _ g	(2) Human rights and safety-related risks	
	<ul style="list-style-type: none"> Human rights violations in the Group's business activities 	<ul style="list-style-type: none"> Formulation of the NGK Group Human Rights Policy Issuance of statement on the UK Modern Slavery Act Prevention and reduction of human rights violation risks through compliance with international norms related to human rights
	<ul style="list-style-type: none"> Employee occupational hazards, illness, or physical and mental health problems 	<ul style="list-style-type: none"> 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
	(3) Quality-related risks	
(" - b Z f a U h c b ' g n g h Y a g l f Y U H X ' f j g _ g	<ul style="list-style-type: none"> Quality-related risks such as loss of trust or profits, or contraction in growth, due to serious market complaints, contractual violation, or other unsatisfactory operations 	<ul style="list-style-type: none"> Have Quality Management Department perform monitoring of each business group's quality activities, in line with NGK Quality Policy and under direct supervision of senior management Regarding serious issues, convene quality review meetings in order to find a solution quickly Establishment of Four Rules for Quality Activities Company-wide deployment of quality risk elimination process activities and quality compliance activities
	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Establishment of an IT security system based on common standards within the Group Conduct information security training for employees Appropriate application and management of internal information assets
) " 7 i f f Y b W h i Y l W U b [Y z W U d j U z U b X d f c W f Y a Y b H f Y U H X f l a a	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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
* " A U H f j U g ' d f c W f Y a Y b t U b X ' g i d d ' m i W U j b ' f j g _ g	<ul style="list-style-type: none"> Rise in prices of certain materials and energy in each region 	<ul style="list-style-type: none"> Appropriately reflect risk in sale price Reduce costs through competitive purchasing, design revisions, and other means
	<ul style="list-style-type: none"> Delays in materials procurement and backlogged shipments to customers due to supply chain disruptions 	<ul style="list-style-type: none"> Inventory control Diversification of suppliers

Risks	Summary	Response
7. Climate change and disaster-related risks	<ul style="list-style-type: none"> — Deterioration in business performance due to additional costs incurred by future international GHG regulations, environmental taxes, carbon taxes, etc — Locations facing operational difficulties due to water damage from sea level rise, increased size and magnitude of typhoons, and increased frequency of local torrential rains caused by global warming, or major disasters, fire, or other serious incidents or accidents 	<ul style="list-style-type: none"> — Disclosure of information on risks and opportunities based on recommendations from the Task Force on Climate-Related Financial Disclosures (TCFD) — Formulation of NGK Group Environmental Vision — Development and introduction of products and services that contribute to the realization of a carbon-neutral society — Aim to achieve net zero CO₂ emissions by 2050
	<ul style="list-style-type: none"> — Serious damage to facilities at production bases due to events beyond expectation — Long-term 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 like COVID-19 	<ul style="list-style-type: none"> — Promote business continuity plan (BCP) for entire Group — 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

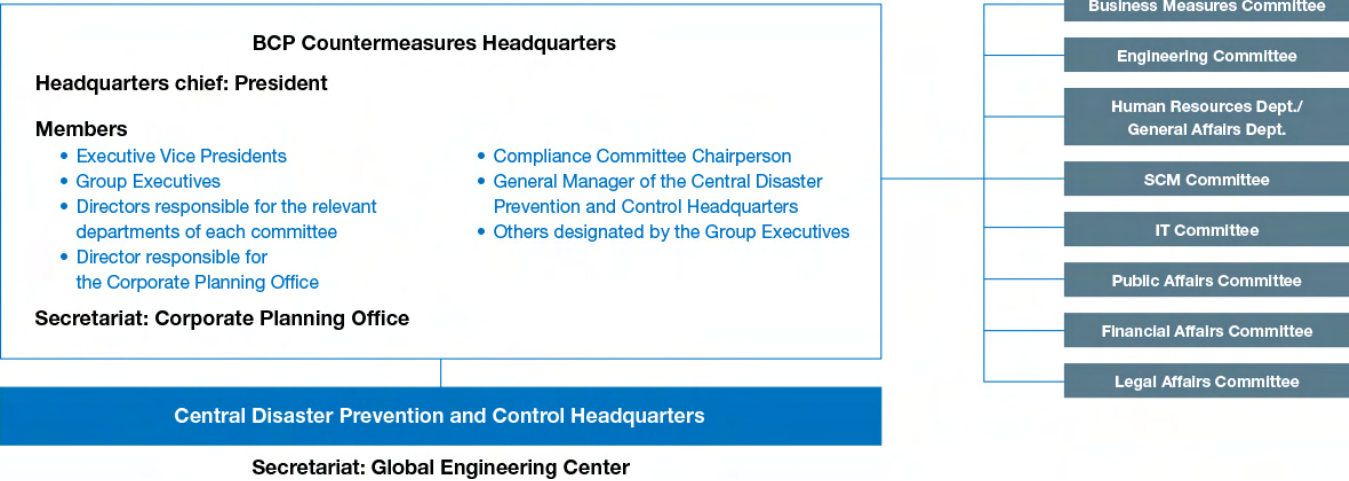
As part of efforts to enhance risk management practices, in FY2022 NGK and its Group companies in Japan conducted the fourth CRS (Corporate Risk Survey).

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 departments 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 presuming a major disaster 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.

FY2022 Initiatives

Education		— Carried out water disaster training for all NGK Group employees in Japan
Awareness		— Provided information relating to disaster preparedness goods
Training		— Revised our training scenarios to make them more effective
Other		— Revised the action plan based on insights gleaned from the prior fiscal year's practical BCP training

Future Initiatives

- Improve the effectiveness of BCP by raising the level of training further (e.g., hold BCP training for operational units)
- Ongoing practical BCP training
- 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

Sustainability

Information Security

[Information Security Measures](#) ▾[Personal Information Management](#) ▾

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 FY2022, due to the impact of the global COVID-19 pandemic, these visits to overseas Group companies were not carried out except in a few cases. However, we 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.

Basic NGK Group Information Security
Policy



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 FY2022 we reviewed the sections pertaining to backup methods and vulnerability management.

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.

Item	Participants	Participation rate
Training for newly hired employees	139	100%
Training for newly promoted supervisors	139	100%
Training for newly promoted managers	80	100%
E-learning	6,369	100%

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 FY2022 we conducted practical training exercises for officers on cybersecurity incidents. We asked an external consulting firm to review our security measures and conduct study sessions. This served not only to reaffirm with management the importance of security to our business continuity, but to strengthen response and recovery from incidents. 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

We have established Personal Information Management Regulations as the NGK Group, 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](#)



Sustainability

Intellectual Property Management

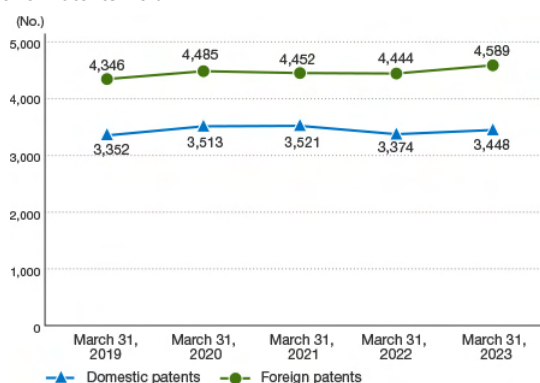
[Basic Approach](#)[IP Management System](#)[Promoting IP Training and Raising Awareness About IP](#)[Disseminating IP Information](#)[Addressing IP Risks in foreign countries](#)

Basic Approach

The NGK Group considers intellectual property (hereinafter referred to as “IP”) rights to be an extremely important management resource. The worldwide acquisition and utilization of rights such as patents, utility models, designs, and trademarks support the NGK Group’s business and R&D. In order to realize the NGK Group Vision: Road to 2050 and roll out our business in the areas of CN (Carbon Neutrality) and DS (Digital Society) on a global scale, we are making efforts to strengthen patent applications for inventions related to systems and services as well as inventions related to our existing product manufacturing. In addition, the IP Department and each development department or business division meet annually for an Intellectual Property Activity Meeting to discuss and formulate IP activity targets based on analysis results such as IP information which includes market information and the status of competitive patent applications, as well as our own development targets.

We check on the progress of activities every quarter, and carry out strategic IP activities in a manner that allows us to flexibly respond to changing conditions.

Number of Patents Held



Number of Patents Held as of March 31, 2023

Domestic patents **3,448**Foreign patents **4,589**

IP Management System

The IP Department carries out integrated management of IP for the entire NGK Group, and also pursues IP-related activities together with various other departments.



Promoting IP Training and Raising Awareness about IP

IP Training for Engineers

We provide e-learning and various seminars related to IP with the aim of providing training and up-skilling for engineers.

We also have our engineers master patent search techniques via individual, computer-based practical training.

Since FY2020, training has been carried out via remote learning in response to the COVID-19 pandemic to encourage participation. From FY2022, we also began offering online seminars about the patent system in an on-demand training format.

IP Training Provided in FY2022

	Intended participants	Participants
E-learning of Patent Act introduction	Young engineers	59
Small-group workshops	Engineers	144
Seminars to acquire IP search skills	Engineers	227
Small-group workshops	Engineers in the business divisions and the R&D departments	117 (total for 15 sessions)

Overseas training of IP Department personnel

In FY2022, a member of the IP Department was dispatched to a patent law firm in the U.S. for about three months in order to help us improve the efficiency of our operations by gathering the latest IP information from the U.S, undergoing practical training, and facilitating smoother communications with attorneys.



Staff member pictured with members of a U.S. patent law firm who provided assistance

Employee invention reward system to provide rewards for employee inventions

In order to further encourage employees to create excellent inventions, we launched a revamped employee invention reward system, which is divided into four categories: application rewards, registration rewards, implementation rewards, and excellent invention rewards.

Excellent invention rewards honor contributions to the company with large financial rewards and commendations for particularly excellent inventions. These rewards include the Contributory Invention Reward for patents and know-how resulting in remarkable contributions to NGK's business, and the Innovative Invention Reward for patents, patent applications, and know-how which is innovative.

In FY2022, after strict examinations, three were chosen for the Contributory Invention Reward and two for the Innovative Invention Reward.

Disseminating IP Information

We disseminate information such as technical trend analyses and investigation know-how throughout the entire NGK Group to support activities to create IP. Also, with regards to how carbon neutrality relates to the NGK Group Vision, we actively share IP information about noteworthy technical fields, and publish our TIPS series on utilizing IP information.

Addressing IP Risks in foreign countries

To support our business for automotive exhaust purification ceramic products, for which we conduct manufacturing on a global scale, we have built a method for properly managing inventions at overseas plants. NGK promotes the practice of IP management overseas at the same high level as in Japan.

Governance Data Collection

Board of Directors

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of directors	NGK	12	13	11	9	9	Persons
Number of outside directors		3	3	3	3	3	Persons
Number of Board of Directors meeting held		14	14	14	13	14	Times

Audit & Supervisory Board

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of Audit & Supervisory Board members	NGK	4	4	4	4	4	Persons
Number of outside Audit & Supervisory Board members		2	2	2	2	2	Persons
Number of Audit & Supervisory Board meeting held		14	14	14	14	14	Times

Executive Officers

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of executive officers (excluding those also serving as directors)	NGK	15	15	22	22	22	Persons
Male		15	14	21	21	21	Persons
Female		0	1	1	1	1	Persons

Compensation for Directors and Audit & Supervisory Board Members

Item	Scope	Category	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Compensation for directors and Audit & Supervisory Board members	NGK	Directors (excluding outside directors)	570	535	591	685	539	Million yen
		Audit & Supervisory Board members (excluding outside Audit & Supervisory Board members)	62	59	59	67	69	Million yen
		Outside officers	66	66	66	68	70	Million yen

Measures for Returning Profits to Shareholders

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Dividends per share	NGK	50	50	30	63	66	Yen
Return on equity (ROE)		7.6	5.8	7.9	12.9	9.0	%

Intellectual Property Management

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Number of patents held (Japan)	NGK	3,352	3,513	3,521	3,374	3,448	Cases
Number of patents held (Overseas)		4,346	4,485	4,452	4,444	4,589	Cases

Compliance

Item	Scope	FY2018	FY2019	FY2020	FY2021	FY2022	Unit
Examples of legal violations	NGK Group	0	0	0	0	0	Cases
Number of helpline consultation cases	NGK	75	55	28	43	38	Cases
Instances of anticompetitive behavior	NGK Group	0	0	0	0	0	Cases
Number of position-based anti-harassment training sessions	NGK	5	5	4	4	4	Times
Number of participants in position-based harassment training	NGK	464	419	417	448	514	Persons
Incidents of corruption or bribery	NGK Group	0	0	0	0	0	Cases

Sustainability

Policies and Guidelines

NGK Group Corporate Business Principles

To continuously realize the NGK Group Philosophy, the role of the NGK Group is to take the lead in the realization of a sustainable society by creating added value that will benefit society and generating employment, through autonomous and responsible behavior under fair and free competition, based on the NGK Group Basic Sustainability Policy. To this end, regardless of its location, the NGK Group will comply with the letter and spirit of relevant laws and regulations and international rules and will fulfill their social responsibility with a strong sense of ethical values, by acting in line with the following eight principles.

1. Realization of a Sustainable Society



We will create new value through the provision of products and services which contribute to the community in order to realize a sustainable society.

2. Respect Human Rights



We will strictly comply with international standards of human rights and respect diversity.

3. Provide a Safe and Enjoyable Work Environment



We will provide a safe and enjoyable work environment that is comfortable for everyone to work in.

4. Honest Business Activities



We will undertake fair and transparent business activities with integrity and strictly comply to international standards, the law and regulations of each country and region.

5. Disclosure of Company Information and Accountability



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

6. Permeate Social Responsibility into our Supply Chain



We will promote a structure that undertakes social responsibility with respect to our trade counterparts and the overall supply chain.

7. Preservation of Global and Planetary Environment



We will work to preserve and resolve problems regarding global and planetary environment.

8. Cooperation with the Region and Community



As a good corporate citizen, we will contribute to the development of the region and community.

Top management will recognize that it is the role to realize the spirit of the principles, build effective governance systems for the conduct of business, and strive to raise awareness of the principles spirit within the NGK Group and the entire NGK group to achieve its full compliance. Top management will also encourage behavior based on the principles within supply chain of the NGK Group. In the event of the NGK Group violating the spirit of the principles, top management will proactively take responsibility to respond to the situation, including resolving the problem, investigating the causes, and preventing the problem from recurring.

NGK Group Code of Conduct

1. Realization of a Sustainable Society



We will create new value through the provision of products and services which contribute to the community in order to realize a sustainable society.

- We will provide products and services that 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

2. Respect Human Rights



We will strictly comply with international standards of human rights and respect diversity.

- We will respect the individuality and independence of each employee, value women's equal rights and refrain from discrimination on the basis of race, national origins, gender, sexual orientation and gender identity, age, religion, belief, existence of disabilities or any other aspect.
- We will prevent the occurrence of harassment or offensive or ^{*1} inhumane treatment in the workplace and take prompt and appropriate action in case it occurs.
- We will undertake business activities without the use of ^{*2} forced labor or child labor. We will strictly comply with the law and regulations of each country and region relating to labor and provide appropriate working conditions for young workers.
- We will not violate the rights of indigenous peoples and others by acquiring, developing or otherwise using land, forests or water resources in connection with our business activities, including forced evictions and the appropriation of targeted resources.

< Supplementary explanation of terms >

^{*1} Inhumane treatment includes violence against workers, gender-based violence, sexual harassment, sexual abuse, corporal punishment, mental or physical oppression, bullying, public humiliation, disgrace or exposure, and verbal abuse.

^{*2} Forced labor refers to forced, bonded (including debt bondage) or internment camp labor, involuntary or exploitative prison labor, slave labor or human trafficking.

3. Provide a Safe and Enjoyable Work Environment



We will provide a safe and enjoyable work environment that is comfortable for everyone to work in.

- We will strictly comply with the law and regulations of each country and region relating to labor and provide proper working conditions, such as working hours, holidays, leave, wages and benefits.
- We will respect our employees' rights to freedom of association and collective bargaining in accordance with the law and regulations of each country and region.
- We will strictly comply with the law and regulations of each country and region relating to safety and sanitation, provide our employees with a safe and secure workplace and strive to ensure that they are physically and mentally healthy.
- We will aim to facilitate the creation of a healthy work-life balance and support a variety of working styles.
- We will build trust through sincere dialogue and discussions with employees.
- We will provide employees with opportunities for education and opportunities to develop their motivation and abilities.

4. Honest Business Activities



We will undertake fair and transparent business activities with integrity and strictly comply to international standards, the law and regulations of each country and region.

• [Ethical business activities]

Being part of the international community, we will abide by domestic and international laws and regulations, respect the culture and history of each country and region and act with integrity and high ethical standards. We will respect existing rules and approach our work with confidence.

• [Anti-corruption]

We will strive for comprehensive prevention of corruption by prohibiting ^{*3} bribery, embezzlement, situations whereby there is a breach of trust, ^{*4} conflict-of-interest, ^{*5} insider trading, ^{*6} money laundering, obstruction of justice and any other abuse of authority or position for the benefit of an individual or organization.

< Supplementary explanation of terms >

^{*3} Bribery refers to the act of offering money, gifts or services (bribery) to third parties in order to obtain illicit profit, or the act of accepting any such bribery. In order to prevent acts constituting bribery from occurring in connection with our company, we maintain healthy relationships with our stakeholders, including public and government officials, in the countries and regions where we operate. We refrain from accepting such bribes from third parties in accordance with the local laws and regulations. We only offer gifts or entertainment in case there is a legitimate business reason to do so and to a socially accepted extent; we will not regularly offer gifts or entertainment. In addition, we will refrain from making small payments (facilitation payments) to public officials in order to facilitate and expedite routine services, such as obtaining permits and/or licenses and customs clearance. We are using and appropriately managing company assets exclusively for legitimate business purposes. These assets include cash, equipment, software and vehicles. We will not utilize such assets for the benefit of any individual or third party.

^{*4} Conflict of interest refers to obtaining personal benefits at the expense of the interests of our companies or offering benefits to third parties, including relatives and friends, such as selecting as trade counterparts those who have personal interest or conducting businesses that are competitive with the businesses of our companies.

^{*5} Insider trading refers to buying or selling securities, including shares, based on the knowledge of material non-public information about our companies, trade counterparts and others. In order to avoid such occurrence, we must handle such material information carefully.

^{*6} Money laundering refers to any concealment or misrepresentation of funds obtained through illegal activities, such as tax evasion or window-dressing.

- [Fair competition]

We recognize the importance of free competition in the market and will practice fair and free competition in compliance with the competition laws applicable to each country and region. We will never undertake cartel activities with competitors or other acts that are suspected to fall under such activities.

- [Assured performance of contract]

We will live up to the trust of our customers and trade counterparts by always fulfilling our contracts and agreements in good faith. If any issues should arise which may prevent us from fulfilling our contracts as originally agreed upon, we will discuss such issues with our counterparts and perform our duties in accordance with the new terms agreed upon by all parties. We will never enter into any contracts that violate social norms or the law and regulations.

- [Protection of personal and confidential information]

In compliance with the laws and regulations and internal rules regarding personal information, we will collect and use personal information only when there is a legitimate business purpose to do so. We will keep any personal information we obtain under strict control. In addition, we will take stringent control measures to prevent any leaks of confidential information of our companies and third parties.

- [Protection of intellectual property rights]

Intellectual property rights are a management resource vital to our business. We will actively create, protect and utilize ^{*7} intellectual property rights. We will take the necessary and appropriate steps to eliminate fake/counterfeit goods and strive to prevent any infringement of third party intellectual property rights.

< Supplementary explanation of terms >

^{*7} Intellectual property rights include patents, utility models, designs, trademark rights and copyrights.

- [Strict export and import controls]

In the export of products and other cargo, technology and software, we will comply with relevant laws, regulations and internal rules, and exercise appropriate export controls, in order to maintain the peace and security of the international community. When we import or export products and others, we will submit proper customs declarations in accordance with the relevant laws and regulations of each country and region.

- [Ensuring the quality and safety of products and services]

We will always strive to improve the quality of our products and services through a dialogue with our customers.

We will acquire, store and verify our product quality data in accordance with our obligations to our customers. We will never commit any wrongful acts, such as stealing, forging, replacing or concealing data. In the event of an accident or malfunction, appropriate action will be taken immediately. Should there be any concern that our products or services may affect the safety of our customers, we will respond promptly and appropriately to prevent the occurrence or expansion of any such incident.

- [Accurate record]

To ensure timely and appropriate disclosure, we will comply with applicable laws, regulations and internal rules. We will establish and properly operate an internal control system to accurately record and report financial and other information. All records will be properly stored, disposed of, and deleted in accordance with applicable laws, regulations and internal rules.

- [Dealing with anti-social forces]

We will stand firm against anti-social forces and have no involvement with them. When contacted by anti-social forces, we will not respond individually, but immediately report it to our supervisors (department in charge).

- [Maintaining fair relations with the administration]

We will strive to maintain a highly transparent, healthy and fair relationship with the political and administrative sectors, abiding by the law and regulations of each country and region in connection with political contributions and donations. We will not act to invite suspicion or distrust from the community.

- [Business risk management]

We will practice risk management with a constant awareness of the risks involved in our operations. We will strive to identify and prevent from materializing potential risks. In cases where a risk materializes, we will respond promptly and strive to minimize the impact on our stakeholders.

- [Establishment of a whistleblowing system and prohibition on retaliation]

If we become aware of or suspect a compliance violation, we will promptly report it to our supervisors or the whistleblower hotline. We will not retaliate against anyone who files a report in any way.

5. 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.

6. Permeate Social Responsibility into our Supply Chain



We will promote a structure that undertakes social responsibility with respect to our trade counterparts and the overall supply chain.

- We will respect our trade counterparts as equal partners and work to build a trust relationship and promote mutual development.
- We will contribute to the safety and growth of the region and society through responsible procurement of resources and the promotion of green procurement.
- We will ensure respect for human rights, a positive working environment and honest business activities supported by compliance with the law and regulations throughout our supply chain.

7. Preservation of Global and Planetary Environment



We will work to preserve and resolve problems regarding global and planetary environment.

- We will provide products and services that contribute to the preservation of the global and planetary environment, such as contributing to carbon neutrality.
- We will directly address the impact of our business activities on the environment by, for example, working to build a circular economy and effectively use water resources.
- We will work for the preservation of biological diversity and sustainability.
- We will strictly comply with the law and regulations relating to the environment in each country and region.

8. Cooperation with the Region and Community



As a good corporate citizen, we will contribute to the development of the region and community.

- As members of the region and community, we will actively undertake activities that contribute to society. We will also cooperate and collaborate with a wide range of stakeholders.
- We will actively promote and support activities in which employees voluntarily participate in order to contribute to the community.

NGK Group Basic Sustainability Policy

1. Basic approach

By providing new value through our unique ceramic technologies under the NGK Group Philosophy of “Enriching Human Life by Adding New Value to Society,” NGK Insulators, Ltd. and its Group companies (hereinafter, the “NGK Group”) hope to contribute to the achievement of a sustainable society and earn the trust of society by meeting its expectations toward us. Setting this as the NGK Group’s basic approach to sustainability, and keeping Environment, Society, and Governance (ESG) and the Sustainable Development Goals (SDGs) at the forefront in realizing the NGK Group Philosophy, we aim to contribute to the achievement of carbon neutrality and a digital society as we continuously enhance our corporate value.

2. Identification of material issues (Materiality) and promotion of initiatives

For the realization of the NGK Group Philosophy and for the sustainable advancement of society and the NGK Group, we will identify material issues faced by the NGK Group and our stakeholders as Materiality, and will address these in accordance with the NGK Group Code of Conduct as a guideline for our actions.

3. Responsibilities of the Board of Directors

The Board of Directors seeks 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. The Board of Directors also engages in appropriate disclosure of information and, based on insights gained through valuable dialogue with diverse stakeholders, strives to improve our management and to live up to the trust and expectations of society.

April 2023 Resolution of the NGK Insulators, Ltd. Board of Directors

NGK's Core Policy on the Environment

Recognizing that protecting the environment is a vital issue that all of humanity must face, the NGK Group formulated its Core Policy on the Environment in April 1996 in order to bring its corporate activities into harmony with the environment. Based on the NGK Group Environmental Vision announced in April 2021, we will promote initiatives to contribute to carbon neutrality, a recycling-oriented society, and harmony with nature. On the basis of this 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.

Guidelines for Environmental Action

1. Strive to develop, design, and manufacture products that contribute to the environment and products with low environmental impact.
2. Work to reduce the environmental impact arising from business activities.
Conduct design reviews to scientifically study and evaluate the environmental impact of business activities.
 - Promote energy conservation measures and expand the use of renewable energy for all processes and facilities, and make efforts to control CO₂ emissions.
 - Promote resource saving and recycling, and make efforts to control the generation of by-products.
 - Manage the risks of water resources and strive to make effective use of water in our business activities.
 - Through the appropriate use and control of chemical agents, work to reduce the risks inherent in toxic substances.
 - Give precedence to environmentally friendly materials, parts, products, and facilities in procurement and purchasing, strengthening cooperative alliances with our business partners.
3. Enhance environmental management systems from a global perspective while continuously reducing our environmental impact.
4. Not only abide by environmental laws, regulations, and other requirements, but also institute voluntary standards and work to improve our own environmental conservation.
5. Provide environmental information to the public at the appropriate time and pursue dialogue with all stakeholders. Proactively develop social action programs. Also, engage in education and publicity in order to improve employees' environmental consciousness.

Quality Policy

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

NGK Group Human Rights Policy

The NGK Group hereby establishes this "NGK Group Human Rights Policy" (this "Policy") based on the "United Nations Guiding Principles on Business and Human Rights" and will promote initiatives to respect human rights to prevent violation or abuse of human rights of anyone impacted by the NGK Group's business operations.

1. Basic Approach to Human Rights

The NGK Group supports and respects the "International Bill of Human Rights" adopted by the United Nations (consisting of the Universal Declaration of Human Rights and the International Covenants on Human Rights), the "ILO Declaration on Fundamental Principles and Rights at Work", the "OECD Guidelines for Multinational Enterprises" and other international norms.

With NGK INSULATORS, LTD. ("NGK") signed up to the United Nations Global Compact, the NGK Group supports and respects the Ten Principles of the United Nations Global Compact.

2. Applicable Laws and Regulations

The NGK Group will comply with laws and regulations (the "Legislation") of each of the countries and regions where it operates. In case of any conflict between internationally accepted principles of human rights and the Legislation of any country or region, the NGK Group will seek ways to respect the internationally accepted principles of human rights to the utmost extent.

3. Scope of Application

This Policy applies to all directors, officers and employees of the NGK Group (the “Directors and Employees”). The NGK Group expects that its suppliers will also comply with this Policy.

4. Education and Training

The NGK Group will provide the Directors and Employees with appropriate education and training to effectively implement this Policy throughout its group-wide business operations.

5. Main Focus of the Group's Commitment to Human Rights

The NGK Group will:

- Comply with international norms on human rights and respect diversity of people;
- Respect human rights and undertake business activities without the use of forced labor or child labor; Provide young workers with fair working conditions that strictly comply with the Legislation of each country and region.
- Respect the individuality and independence of each employee and not engage in discrimination on the basis of race, citizenship, gender, age, religion, belief, existence of handicaps, sexual diversity or any other aspect; and
- Prevent the occurrence of harassment in the workplace and take prompt and appropriate action in the case where it occurs.

The NGK Group will:

- Strictly comply with the Legislation of each country and region relating to safety and sanitation, provide a safe and enjoyable work environment that is comfortable for everyone to work in for all;
- Strictly comply with the Legislation of each country and region relating to labor, safety and sanitation, we provide fair working conditions such as working hours, holidays, vacations, wages, and welfare programs.
- Respect employees' right of freedom of association and of collective bargaining in accordance with the Legislation of each of countries and regions where it operates.
- Aim to harmonize work and life, and support a variety of working styles;
- Build up a relationship of trust through sincere debate and discussion with employees;
- Give educational opportunities to employees and provide opportunities to stretch their motivation and abilities; and
- Encourage free and open discussions and aim to create a corporate culture conducive to active communication.

6. Human Rights Due Diligence

The NGK Group will establish a system of human rights due diligence, and will implement processes to identify, prevent and mitigate adverse human rights impacts that the NGK Group's business operations may cause.

7. Remedy

If it is revealed or suspected that the NGK Group has caused adverse human rights impacts (whether directly through its business operations, or through its suppliers), the NGK Group will endeavor to deliver appropriate and effective remedy through good-faith dialogue with related parties.

8. Dialogues and Discussions

In the process of implementation of this Policy, the NGK Group will earnestly engage in dialogue and discussions with stakeholders, acquiring and drawing on independent external expertise on human rights.

9. Information Disclosure

NGK will disclose the status and results of implementation of this Policy on its website and integrated reports or through other channels.

10. Responsible Persons

NGK will designate the director in charge of the personnel division as the director responsible for the implementation of this Policy. The Board of Directors will oversee the status of implementation of this Policy by having the director regularly report the implementation status to the Board of Directors.

This Policy has been approved by NGK's Board of Directors and signed by NGK's Representative Director and President.

NGK Insulators, Ltd.
President

Shigeru Kobayashi

UK Modern Slavery Act Statement

This statement ("Statement") is made pursuant to Section 54 (Part 6) of the Modern Slavery Act 2015 of the United Kingdom to describe the policies and efforts of NGK Insulators, Ltd. and its affiliated companies (hereinafter, the "NGK Group") to prevent the occurrence of modern slavery and human trafficking for the fiscal year ending March 31, 2023.

Among the entities in the NGK Group, NGK Insulators, Ltd. and NGK Europe GmbH are subject to the reporting obligations under the Modern Slavery Act 2015 (United Kingdom); NGK Insulators, Ltd., as the parent company of these reporting entities, discloses this Statement as a joint statement to cover both entities.

1. Organization and supply chains

NGK Group engages mainly in the supply and development of products that support social infrastructure and contribute to environmental conservation, such as ceramic parts for automobiles, insulator products for electric power, electronic parts, and industrial equipment and devices with ceramic technology as its core technology.

The NGK Group is headquartered in Aichi Prefecture, Japan, and has 47 consolidated subsidiaries in 20 countries and regions (including the United Kingdom and the United States), doing business with about 20,000 employees.

In addition, materials and parts of NGK Group products are procured from procurement partners inside and outside the NGK Group around the world.

2. Policies to prevent occurrence of modern slavery and human trafficking

NGK Group has established the NGK Group Corporate Business Principles and the NGK Group Human Rights Policy, which stipulate the attitudes and matters to be respected in conducting business activities. The code and policy, with the approval of the Board of Directors, declare that the NGK Group excludes forced labor, child labor, human trafficking, and all other acts that lead to human rights violations. We are also preparing to formulate the NGK Group Code of Conduct, which officers and employees must comply in the execution of their duties.

With the "NGK Group's Supply-Chain CSR Guideline", the NGK Group requests its supply chain to understand and support the avoidance of the use of conflict minerals that can cause human rights violations and poverty, and the prohibition of forced labor and child labor. The NGK Group and its entire supply chain have made a clear commitment to prevent the occurrence of modern slavery and human trafficking.

3. Due diligence process

4. Risk assessment and management

5. Performance indicators

The NGK Group conducts surveys using a self-assessment questionnaire with reference to the RBA Code of Conduct. The assessment includes many aspects that are related to human rights, such as “identifying forced labor, child labor, and human trafficking,” “working hours, wages, and welfare,” “occupational safety and health,” and “responsible mineral procurement.” Through this survey, the NGK Group looks for, and could gather details on, any human rights risks in its business operations.

In the fiscal year ending March 31, 2023, based on the above due diligence process, we conducted surveys using a self-assessment questionnaire in NGK and its 42 Japan domestic and overseas group companies (4 overseas group companies were added to the 39 companies implemented in the previous fiscal year), to confirm the existence and level of risks.

Additionally, the NGK Group has been establishing whistleblowing systems effective to apply in accordance with circumstances of country or region where each group company locates, such as reporting mechanism available to all employees at respective group companies.

The NGK Group found no cases of forced labor, child labor, or human trafficking in the survey for the fiscal year ending March 31, 2023, thorough the above surveys and whistleblowing systems.

In terms of supply chains, in the fiscal year ending March 31, 2023, the NGK Group conducted risk assessment survey of its supply chain using the Global Compact Network Japan (GCNJ) self-assessment questionnaire for CSR procurement to determine the supply chain member's (about 630 suppliers of NGK domestic group companies) understanding and status. The NGK Group also operates a supplier helpline, where the NGK Group can accept reports on risks of human rights violations, including slavery.

The NGK Group found no cases of forced labor, child labor, or human trafficking in the survey for the fiscal year ending March 31, 2023, thorough the above surveys and whistleblowing systems.

The NGK Group has set up an HR Committee chaired by the Director in charge of the Human Resources Management Department at NGK Insulators, Ltd. The committee manages, shares, and evaluates various human rights risks collected based on the due diligence process, and establishes countermeasures, if necessary.

The NGK Group will continuously improve the effectiveness of the survey by enhancing the assessment scope and contents to find and establish a fair performance indicator for the fiscal year ending March 31, 2024, and thereafter.

6. Educations

The NGK Group issues notifications, distributes guidebooks, posts posters, and conducts on-site education regarding the “NGK Group Corporate Business Principles”. In addition, in the fiscal year ending March 31, 2023, the NGK Group conducted e-learning for “NGK Group Human Rights Policy”, modern slavery, and human trafficking.

Regarding its supply chain, the NGK Group requests its business partners to comply with the above-mentioned “NGK Group’s Supply-Chain CSR Guideline” and request them to submit written consent every year.

This statement was approved by ;

(i) the Board of Directors of NGK Insulators, Ltd. on August 21, 2023

(ii) all the directors of NGK Europe GmbH on August 21, 2023

NGK Insulators, Ltd.

President

Shigeru Kobayashi

NGK Europe GmbH

Managing Director

Ryugo Takeda

Safety and Health Policy

‘Maintaining the safety and health of each employee constitutes a basis for a company’s operation and existence’

1. Comply with Occupational Safety and Health Law and Company Regulations.
2. Engage in activities in line with the OSHMS* to continuously raise the safety and health standards.
3. Promote safety and health activities under enough education & training and good communication with employees.
4. Reduce the risks of hazards and toxicity and prevent accidents to provide a comfortable work environment.
5. Prevent employees’ health hazards and enhance health promoting activities.

*OSHMS: Occupational Safety and Health Management System

NGK Group Human Capital Management Policy

NGK Group defines “People who embrace challenges and teamwork” as one of Our Values of NGK Group Philosophy, and we are committed to realize Our Mission: Enriching Human Life by Adding New Value to Society. NGK Group is committed to drive the Five Transformations to realize the NGK Group Vision, and we believe that the active engagement of each personnel is crucial for accomplishing the Five Transformations. We define the core of the Group’s human capital management as hiring and developing personnel to enrich team members dedicated to the Five Transformations, and establishing an environment where each personnel can perform at full potential. Building upon this core belief, we establish the “Human Resource Development Policy” and “Workplace Development Policy” as follows.

Human Resource Development Policy

NGK Group develops personnel with the following abilities and mindset required to realize the Five Transformations.

- Cultivate advanced knowledges, skills, abilities or their combination, and proactively approach to problems
- Demonstrate teamwork and persistently lead to results
- Autonomously grow and continuously change oneself and the company

Workplace Development Policy

NGK Group develops the following workplace environment where each personnel can perform at full potential.

- **Diverse and Inclusive Workplace**
A workplace where everyone is acknowledged and respected, regardless of external attributes such as race, nationality, gender, and age, as well as internal attributes such as religion, beliefs, experiences, and values.
- **Enriched and Lively Workplace**
A workplace where diverse personnel can feel rewarded, stay healthy both physically and mentally, have colleagues we respect and enjoy working with, and maintain a good work-life balance.
- **Open Workplace that encourages challenges**
A workplace with open communication and psychological safety, that embraces courageous challenges for growth.

Basic NGK Group Information Security Policy

As our information-communication society grows ever more sophisticated, the NGK Group has come to handle much more in the way of information assets, and is aggressively pursuing the safekeeping of any and all information assets it retains. While it is essential to share these assets in order to conduct business in a smooth and efficient manner, establishing a system for information security likewise becomes a necessity. For this reason, the NGK group has set forth this basic policy regarding information security and will work to safeguard the information assets in its possession.

- In order to ensure the safety of retained information assets, which includes information retained in the course of business activities, as well as any devices, facilities, or services necessary to handle said information, we will establish an information security management system to prevent unauthorized intrusion, loss, theft, leaks, modification, damage, denial-of-service attacks, and any other threat.
- All individuals who work at any office of NGK or its group companies and who make use of information assets will be subject to ongoing information security education and training for an increased awareness of security issues. Actions in violation of this Policy may be subject to legal penalties, as well as reprimands set forth in labor regulations, contracts, and/or other binding documents.
- Should a security issue arise concerning information assets, we will promptly investigate the cause and work to keep any damage to a minimum.
- We will comply with all laws and social norms with regard to information security, as well as any such contractual requirements and duties entered into with a customer.
- NGK will strive to continuously review and revise the activities noted herein.

Basic Purchasing Policy

Open and Fair

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

Partnership

- Mutual prosperity based on mutual trust with suppliers

Relationship with Society

- Compliance with laws
- Preservation of global environment

NGK Group Tax Policy

The NGK Group regards compliance as an essential factor in gaining the trust of all of our stakeholders and defines it as the foundation of sustainability. In order to maintain and improve our tax compliance, we will work to maintain tax transparency and enhance awareness among our employees while also building the necessary framework to ensure compliance with laws and regulations and prevent corruption.

1. Compliance

The NGK Group ensures thorough compliance in accordance with the NGK Group Code of Conduct by complying with the tax laws of each country and region and the international agreements that apply to the NGK Group and respecting the spirit of taxation laws.

2. Tax Governance

NGK has established the NGK Group Tax Policy and will ensure compliance with the said policy. We gather and confirm information related to the tax position and tax governance system of our Group companies to help the NGK Board of Directors fulfill its responsibility of overseeing group tax risks. The day-to-day financial accounting and tax activities of the Group companies are managed by the financial managers of each Group company, with the involvement of the president of respective companies. They also report important tax matters to the head of their NGK business group and the NGK Board of Directors in an appropriate manner.

3. Risk Management

The NGK Group considers compliance to be an important aspect of risk management. We always act with integrity, minimizing our tax risks through compliance with applicable tax laws, regulations, rules, international agreements and commercial practices, and our own internal regulations. The NGK Group pays taxes in the appropriate jurisdictions in accordance with the state of our revenue-generating activities without engaging in aggressive tax saving schemes. When dealing with non-routine tax issues, we consult external experts for advice where necessary.

4. Optimization of Tax Burden

The NGK Group does not establish artificial business structures for the purpose of reducing its tax burden. We use available tax incentives to the extent that they fall within the scope of our business objectives. We work to eliminate double taxation where it occurs. Cross-border transactions among Group companies are carried out in accordance with OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations.

5. Relationship with Tax Authorities

The NGK Group acts with good faith and transparency and responds promptly to requests for information from tax authorities of each country and region. We intend to develop long-term, amicable relationships with tax authorities based on mutual trust and respect.

NGK Group Social Contribution Activities Policy

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

1. Basic Approach to Social Contribution Activities

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.

2. Main Focus

Based on the NGK Group Philosophy and Vision, we will work on the following areas as the focuses of activity for social contribution.

People and Education

Not only will we convey the joy of monozukuri (manufacturing) to children who will define the future but we will also support educational activities that can develop local communities.

Environment

Based on the NGK Group Environmental Vision, we will proactively engage in harmony with nature, thereby contributing to the preservation of the global environment.

Community Relations

We take an interest in social issues and advance activities aimed at achieving coexistence with local communities as a trusted corporate citizen. Additionally, the NGK Group will participate in efforts to develop appealing communities mainly in countries and regions in which the NGK Group has business sites.

For the purpose of enhancing sensitivity to matters in society, and furthering understanding of diversity and such like, we will encourage all of our employees to take part in social contribution activities and support them by offering them opportunities to experience activities and gain hands-on knowledge.

3. Information Disclosure

We will regularly distribute information on activities to help all employees working in the NGK Group understand the objective of these activities. Simultaneously, we will disclose information on our initiatives on our website and other media in order to deepen relationships of trust with stakeholders.

Sustainability

GRI Standards Content Index

[GRI content index](#) ▾[GRI 2: General Disclosures 2021](#) ▾[GRI 3: Material Topics 2021](#) ▾[200: Economic](#) ▾[300: Environmental](#) ▾[400: Social](#) ▾

GRI content index

Statement of use	The NGK Group has reported the information cited in this GRI content index for the period from April 1, 2022 to March 31, 2023 with reference to the GRI Standards.
GRI 1 used	GRI 1: Foundation 2021
Applicable standards by GRI sector	None

GRI 2: General Disclosures 2021

Disclosure		Location
The organization and its reporting practices		
2-1	Organizational details	<ul style="list-style-type: none"> — Corporate Outline — Network
2-2	Entities included in the organization's sustainability reporting	<ul style="list-style-type: none"> — Editorial Policy of Sustainability Website > Reporting Boundary
2-3	Reporting period, frequency and contact point	<ul style="list-style-type: none"> — Editorial Policy of Sustainability Website > Third-Party Assurance — Editorial Policy of Sustainability Website > Target Period — Editorial Policy of Sustainability Website > Forward-Looking Statements
2-4	Restatements of information	<ul style="list-style-type: none"> — Environmental Data Collection > Material Balance — Environmental Data Collection > Consumption of Each Energy
2-5	External assurance	<ul style="list-style-type: none"> — Editorial Policy of Sustainability Website > Third-Party Assurance — External Recognition > Inclusion of the NGK Group in Major Indices

Disclosure		Location
Activities and workers		
2-6	Activities, value chain and other business relationships	<ul style="list-style-type: none"> — Corporate Outline — Supply Chain Management > Supplier Assessment — Annual Securities Report (FYE March 31, 2023) > p.5 Overview of Business (Japanese)
2-7	Employees	<ul style="list-style-type: none"> — Social Data Collection > Basic Information on Employees — Annual Securities Report (FYE March 31, 2023) > p.11 Overview of Employees (Japanese)
2-8	Workers who are not employees	-
Governance		
2-9	Governance structure and composition	<ul style="list-style-type: none"> — Governance System — Annual Securities Report (FYE March 31, 2023) > p.72 Overview of Corporate Governance (Japanese) — Corporate Governance Report
2-10	Nomination and selection of the highest governance body	<ul style="list-style-type: none"> — Board of Directors > Outside Directors/Outside Audit & Supervisory Board Members — Board of Directors > Effectiveness of the Board of Directors
2-11	Chair of the highest governance body	— Governance System > Committees on Corporate Governance
2-12	Role of the highest governance body in overseeing the management of impacts	— ESG Management > ESG Action System
2-13	Delegation of responsibility for managing impacts	— ESG Management > ESG Action System
2-14	Role of the highest governance body in sustainability reporting	— ESG Management > ESG Action System
2-15	Conflicts of interest	<ul style="list-style-type: none"> — Board of Directors > Outside Directors/Outside Audit & Supervisory Board Members — Annual Securities Report (FYE March 31, 2023) > p.72 Overview of Corporate Governance (Japanese)
2-16	Communication of critical concerns	<ul style="list-style-type: none"> — Compliance Promotion Structure > Whistleblowing System — Risk Management > Risk Governance
2-17	Collective knowledge of the highest governance body	— Board of Directors > Effectiveness of the Board of Directors
2-18	Evaluation of the performance of the highest governance body	— Board of Directors > Effectiveness of the Board of Directors
2-19	Remuneration policies	— Compensation for Directors and Audit & Supervisory Board Members > Alignment of Officer Compensation with Long-term Performance
2-20	Process to determine remuneration	<ul style="list-style-type: none"> — Compensation for Directors and Audit & Supervisory Board Members > Alignment of Officer Compensation with Long-term Performance — Annual Securities Report (FYE March 31, 2023) > p.72 Overview of Corporate Governance (Japanese)

Disclosure		Location
2-21	Annual total compensation ratio	<ul style="list-style-type: none"> Compensation for Directors and Audit & Supervisory Board Members > Alignment of Officer Compensation with Long-term Performance
Strategy, policies and practices		
2-22	Statement on sustainable development strategy	<ul style="list-style-type: none"> Message from the President
2-23	Policy commitments	<ul style="list-style-type: none"> ESG Management > NGK Group Basic Sustainability Policy NGK Group Core Policy on the Environment / Environmental Vision > NGK's Core Policy on the Environment Respect for Human Rights > Basic Approach Respect for Human Rights > Related Policies and Approaches
2-24	Embedding policy commitments	<ul style="list-style-type: none"> ESG Management > ESG Action System NGK Group Core Policy on the Environment / Environmental Vision > Carbon Neutrality Strategic Roadmap Environmental Management System > Environmental Management System Respect for Human Rights > Human Rights Due Diligence Respect for Human Rights > Management System Supply Chain Management > Supplier Assessment
2-25	Processes to remediate negative impacts	<ul style="list-style-type: none"> Respect for Human Rights > Human Rights Due Diligence Respect for Human Rights > Grievance Mechanisms Supply Chain Management > Communication Activities with Procurement Partners
2-26	Mechanisms for seeking advice and raising concerns	<ul style="list-style-type: none"> Respect for Human Rights > Grievance Mechanisms Compliance Promotion Structure > Whistleblowing System
2-27	Compliance with laws and regulations	<ul style="list-style-type: none"> Environmental Management System > Environmental Risk Management Compliance Promotion Structure > NGK Group Corporate Business Principles
2-28	Membership associations	<ul style="list-style-type: none"> ESG Management > Endorsement and Participation in Initiatives Information Disclosure Based on TCFD Recommendations
Stakeholder engagement		
2-29	Approach to stakeholder engagement	<ul style="list-style-type: none"> ESG Management > Communication with Stakeholders
2-30	Collective bargaining agreements	<ul style="list-style-type: none"> Human Resources Management > Communication with Employees

GRI 3: Material Topics 2021

Disclosure		Location
Material topics		
3-1	Process to determine material topics	<ul style="list-style-type: none"> Materiality > Basic Approach
3-2	List of material topics	<ul style="list-style-type: none"> Materiality > Basic Approach
3-3	Management of material topics	<ul style="list-style-type: none"> Materiality: Initiatives for Climate Change Materiality: Promotion of Resource Recycling Materiality: Prevention of Environmental Pollution Materiality: Conservation and Restoration of Biodiversity Materiality: Pursuit of Quality and Product Safety Materiality: Contribution to Digital Social Infrastructure Materiality: Enhancing Value of Human Resource Materiality: Respecting Human Rights Materiality: Promotion of Sustainable Procurement

200: Economic

Disclosure		Location
GRI 201: Economic Performance 2016		
201-1	Direct economic value generated and distributed	<ul style="list-style-type: none"> Annual Securities Report (FYE March 31, 2023) > p.2 Corporate Overview (Japanese)
201-2	Financial implications and other risks and opportunities due to climate change	<ul style="list-style-type: none"> Information Disclosure Based on TCFD Recommendations > Strategy Risk Management > Risk Governance
201-3	Defined benefit plan obligations and other retirement plans	<ul style="list-style-type: none"> Annual Securities Report (FYE March 31, 2023) > pp.135-137 Defined Benefit System (Japanese)
201-4	Financial assistance received from government	<ul style="list-style-type: none"> Annual Securities Report (FYE March 31, 2023) > p.105 Consolidated Income Statement (Japanese)
GRI 202: Market Presence 2016		
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	-
202-2	Proportion of senior management hired from the local community	-
GRI 203: Indirect Economic Impacts 2016		
203-1	Infrastructure investments and services supported	<ul style="list-style-type: none"> Social Contribution Activities
203-2	Significant indirect economic impacts	<ul style="list-style-type: none"> Annual Securities Report (FYE March 31, 2023) > Part 1: No. 2 Business Situation (Japanese)
GRI 204: Procurement Practices 2016		
204-1	Proportion of spending on local suppliers	-

Disclosure		Location
GRI 205: Anti-corruption 2016		
205-1	Operations assessed for risks related to corruption	Corruption Prevention Structure > Corruption Prevention Structure
205-2	Communication and training about anti-corruption policies and procedures	Corruption Prevention Structure > Corruption Prevention Structure Compliance Initiatives > Compliance Education
205-3	Confirmed incidents of corruption and actions taken	Corruption Prevention Structure > Corruption Prevention Structure Governance Data Collection > Compliance
GRI 206: Anti-competitive Behavior 2016		
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Compliance Initiatives > Compliance with Competition Laws
GRI 207: Tax 2019		
207-1	Approach to tax	NGK Group Tax Policy
207-2	Tax governance, control, and risk management	NGK Group Tax Policy
207-3	Stakeholder engagement and management of concerns related to tax	NGK Group Tax Policy
207-4	Country-by-country reporting	Tax Transparency

300: Environmental

Disclosure		Location
GRI 301: Materials 2016		
301-1	Materials used by weight or volume	Environmental Data Collection > Material Balance
301-2	Recycled input materials used	Environmental Data Collection > Material Balance
301-3	Reclaimed products and their packaging materials	-
GRI 302: Energy 2016		
302-1	Energy consumption within the organization	Environmental Data Collection > Material Balance
302-2	Energy consumption outside of the organization	-
302-3	Energy intensity	Environmental Data Collection > Consumption of Each Energy
302-4	Reduction of energy consumption	5-Year Environmental Action Plan > Results of the Fifth 5-Year Environmental Action Plan in FY2022 Initiatives Toward Carbon Neutrality > Outline and Goals of Efforts to Reduce CO₂ Emissions Environmental Data Collection > Consumption of Each Energy
302-5	Reductions in energy requirements of products and services	-

Disclosure		Location
GRI 303: Water and Effluents 2018		
303-1	Interactions with water as a shared resource	<ul style="list-style-type: none"> Initiatives for a Recycling-Oriented Society > Water Resource Conservation Materiality : Promotion of resource recycling
303-2	Management of water discharge-related impacts	<ul style="list-style-type: none"> Initiatives for a Recycling-Oriented Society > Water Resource Conservation
303-3	Water withdrawal	<ul style="list-style-type: none"> Environmental Data Collection > Conservation of Water Resources
303-4	Water discharge	<ul style="list-style-type: none"> Environmental Data Collection > Conservation of Water Resources
303-5	Water consumption	<ul style="list-style-type: none"> Environmental Data Collection > Conservation of Water Resources
GRI 304: Biodiversity 2016		
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	<ul style="list-style-type: none"> Initiatives for Harmony with Nature > Approach to Protecting Biodiversity
304-2	Significant impacts of activities, products and services on biodiversity	-
304-3	Habitats protected or restored	<ul style="list-style-type: none"> Initiatives for Harmony with Nature > Approach to Protecting Biodiversity
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	-
GRI 305: Emissions 2016		
305-1	Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> Environmental Data Collection > GHG Emissions
305-2	Energy indirect (Scope 2) GHG emissions	<ul style="list-style-type: none"> Environmental Data Collection > GHG Emissions
305-3	Other indirect (Scope 3) GHG emissions	<ul style="list-style-type: none"> Environmental Data Collection > GHG Emissions
305-4	GHG emissions intensity	<ul style="list-style-type: none"> Environmental Data Collection > GHG Emissions
305-5	Reduction of GHG emissions	<ul style="list-style-type: none"> 5-Year Environmental Action Plan > Results of the Fifth 5-Year Environmental Action Plan in FY2022 Initiatives Toward Carbon Neutrality > Outline and Goals of Efforts to Reduce CO₂ Emissions Environmental Data Collection > GHG Emissions
305-6	Emissions of ozone-depleting substances (ODS)	
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	<ul style="list-style-type: none"> Environmental Data Collection > Chemical Management System
GRI 306: Waste 2020		
306-1	Waste generation and significant waste-related impacts	<ul style="list-style-type: none"> Environmental Data Collection > Material Balance Initiatives for a Recycling-Oriented Society

Disclosure		Location
306-2	Management of significant waste-related impacts	Initiatives for a Recycling-Oriented Society > Reducing Discarded Materials
306-3	Waste generated	Environmental Data Collection > Discarded Materials
306-4	Waste diverted from disposal	Environmental Data Collection > Discarded Materials
306-5	Waste directed to disposal	Environmental Data Collection > Discarded Materials
GRI 308: Supplier Environmental Assessment 2016		
308-1	New suppliers that were screened using environmental criteria	Supply Chain Management > Supplier Assessment
308-2	Negative environmental impacts in the supply chain and actions taken	-

400: Social

Disclosure		Location
GRI 401: Employment 2016		
401-1	New employee hires and employee turnover	Social Data Collection > Basic Information on Employees Social Data Collection > Diversity & Inclusion
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Work-Life Balance > Enhancing Systems for Supporting Work-Life Balance
401-3	Parental leave	Work-Life Balance > Enhancing Systems for Supporting Work-Life Balance
GRI 402: Labor/Management Relations 2016		
402-1	Minimum notice periods regarding operational changes	-
GRI 403: Occupational Health and Safety 2018		
403-1	Occupational health and safety management system	Occupational Safety and Health > Basic Approach
403-2	Hazard identification, risk assessment, and incident investigation	Occupational Safety and Health > Structure to Promote Safety and Health Management Occupational Safety and Health > Enhancing Safety and Health Activities
403-3	Occupational health services	Occupational Safety and Health > Structure to Promote Safety and Health Management Occupational Safety and Health > Enhancing Safety and Health Activities
403-4	Worker participation, consultation, and communication on occupational health and safety	Occupational Safety and Health > Structure to Promote Safety and Health Management Occupational Safety and Health > Enhancing Safety and Health Activities

Disclosure		Location
403-5	Worker training on occupational health and safety	Occupational Safety and Health > Safety and Health Training
403-6	Promotion of worker health	Health Management
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Safety and Health > Enhancing Safety and Health Activities Social Data Collection > Occupational Safety and Health
403-8	Workers covered by an occupational health and safety management system	Occupational Safety and Health > Enhancing Safety and Health Activities Social Data Collection > Occupational Safety and Health
403-9	Work-related injuries	Occupational Safety and Health > Enhancing Safety and Health Activities Social Data Collection > Occupational Safety and Health
403-10	Work-related ill health	Occupational Safety and Health > Enhancing Safety and Health Activities Social Data Collection > Occupational Safety and Health
GRI 404: Training and Education 2016		
404-1	Average hours of training per year per employee	Human Resource Development > Skills Development for Employees Social Data Collection > Human Resource Development
404-2	Programs for upgrading employee skills and transition assistance programs	Human Resource Development > Skills Development for Employees
404-3	Percentage of employees receiving regular performance and career development reviews	Human Resources Management > Fair Treatment and Evaluation
GRI 405: Diversity and Equal Opportunity 2016		
405-1	Diversity of governance bodies and employees	Social Data Collection > Diversity & Inclusion Annual Securities Report (FYE March 31, 2023) > p.72 Overview of Corporate Governance (Japanese)
405-2	Ratio of basic salary and remuneration of women to men	Social Data Collection > Diversity & Inclusion
GRI 406: Non-discrimination 2016		
406-1	Incidents of discrimination and corrective actions taken	-
GRI 407: Freedom of Association and Collective Bargaining 2016		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Respect for Human Rights > Human Rights Due Diligence Supply Chain Management > Supplier Assessment
GRI 408: Child Labor 2016		
408-1	Operations and suppliers at significant risk for incidents of child labor	Respect for Human Rights > Human Rights Due Diligence Supply Chain Management > Supplier Assessment

Disclosure		Location
GRI 409: Forced or Compulsory Labor 2016		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	<ul style="list-style-type: none"> — Respect for Human Rights > Human Rights Due Diligence — Supply Chain Management > Supplier Assessment
GRI 410: Security Practices 2016		
410-1	Security personnel trained in human rights policies or procedures	-
GRI 411: Rights of Indigenous Peoples 2016		
411-1	Incidents of violations involving rights of indigenous peoples	-
GRI 413: Local Communities 2016		
413-1	Operations with local community engagement, impact assessments, and development programs	<ul style="list-style-type: none"> — Respect for Human Rights > Human Rights Due Diligence — Supply Chain Management > Supplier Assessment
413-2	Operations with significant actual and potential negative impacts on local communities	<ul style="list-style-type: none"> — Respect for Human Rights > Human Rights Due Diligence — Supply Chain Management > Supplier Assessment
GRI 414: Supplier Social Assessment 2016		
414-1	New suppliers that were screened using social criteria	— Supply Chain Management > Supplier Assessment
414-2	New suppliers that were screened using social criteria	-
GRI 415: Public Policy 2016		
415-1	Political contributions	<ul style="list-style-type: none"> — Board of Directors > Structure of the Board of Directors — Corruption Prevention Structure > Responsible Political Involvement
GRI 416: Customer Health and Safety 2016		
416-1	Assessment of the health and safety impacts of product and service categories	<ul style="list-style-type: none"> — Pursuing Quality — Pursuing Product Safety > Risk Assessment
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-
GRI 417: Marketing and Labeling 2016		
417-1	Requirements for product and service information and labeling	-
417-2	Incidents of non-compliance concerning product and service information and labeling	-
417-3	Incidents of non-compliance concerning marketing communications	-
GRI 418: Customer Privacy 2016		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	— Privacy Policy

Sustainability

ISO 26000 Content Index

Core Subjects	Issues	Corresponding items
Organizational Governance	Organizational Governance	<ul style="list-style-type: none"> — Message from the President — ESG Management — Corporate Governance (General) — Compliance (General) — Risk Management (General) — NGK Group Philosophy — NGK Group Corporate Business Principles and Code of Conduct — Policies and Guidelines
Human Rights	<ol style="list-style-type: none"> 1. Due diligence 2. Human rights risk situations 3. Avoidance of complicity 4. Resolving grievances 5. Discrimination and vulnerable groups 6. Civil and political rights 7. Economic, social and cultural rights 8. Fundamental principles and rights at work 	<ul style="list-style-type: none"> — Message from the President — ESG Management — Respect for Human Rights — Supply Chain Management — Social Contribution Activities — Occupational Safety and Health — Health Management — Compliance Initiatives — NGK Group Corporate Business Principles and Code of Conduct — Policies and Guidelines — Procurement Information — UK Modern Slavery Act Statement
Labour Practices	<ol style="list-style-type: none"> 1. Employment and employment relationships 2. Conditions of work and social protection 3. Social dialogue 4. Health and safety at work 5. Human development and training in the workplace 	<ul style="list-style-type: none"> — Message from the President — ESG Management — Respect for Human Rights — Human Capital Management — Human Resources Management — Work-Life Balance — Diversity and Inclusion — Human Resource Development — Occupational Safety and Health — Health Management — Social Contribution Activities — Supply Chain Management — Improving Customer Satisfaction — Compliance Initiatives

Core Subjects	Issues	Corresponding items
Environment	<ol style="list-style-type: none"> 1. Prevention of pollution 2. Sustainable resource use 3. Climate change mitigation and adaptation 4. Protection of the environment, biodiversity and restoration of natural habitats 	<ul style="list-style-type: none"> — Message from the President — Environmental Policy and Environmental Vision (General) — Achieving Our Environmental Vision (General) — Environmental Management (General) — Information Disclosure Based on TCFD Recommendations — NGK Group Corporate Business Principles and Code of Conduct — NGK Group Vision
Fair Operating Practices	<ol style="list-style-type: none"> 1. Anti-corruption 2. Responsible political involvement 3. Fair competition 4. Promoting social responsibility in the value chain 5. Respect for property rights 	<ul style="list-style-type: none"> — Message from the President — Corporate Governance (General) — Compliance (General) — Risk Management (General) — Intellectual Property Management — NGK Group Corporate Business Principles and Code of Conduct — Policies and Guidelines
Consumer Issues	<ol style="list-style-type: none"> 1. Fair marketing, factual and unbiased information and fair contractual practices 2. Protecting consumers' health and safety 3. Sustainable consumption 4. Consumer service, support, and complaint and dispute resolution 5. Consumer data protection and privacy 6. Access to essential services 7. Training and awareness-raising 	<ul style="list-style-type: none"> — ESG Management — Environmental Policy and Environmental Vision (General) — Achieving Our Environmental Vision (General) — Improving Customer Satisfaction (General) — Compliance Initiatives — Risk Management (General) — NGK Group Corporate Business Principles and Code of Conduct — Policies and Guidelines
Community Involvement and Development	<ol style="list-style-type: none"> 1. Community involvement 2. Training and culture 3. Employment creation and skills development 4. Technology development and access 5. Wealth and income creation 6. Health 7. Social investment 	<ul style="list-style-type: none"> — Message from the President — ESG Management — Initiatives for Harmony with Nature — Tax Transparency — Health Management — Social Contribution Activities — NGK Group Social Contribution Activities — NGK Foundation for International Students — NGK Group Corporate Business Principles and Code of Conduct

External Recognition

[Inclusion of the NGK Group in Major Indices](#) | [ESG-Related External Recognition](#)

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 six 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)

2023 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.

S&P/JPX Carbon Efficient Index



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 the following assessments from the CDP.

	2022
CDP-Climate Change	A-
CDP-Water Security	A-
CDP SUPPLIER ENGAGEMENT	A-

L-Boshi



We acquired level 3 certification, the highest rank, of L-Boshi 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, 2023)

Corporate Outline

Company name	NGK Insulators, Ltd.	Consolidated subsidiaries	47
Address	2-56 Suda-cho, Mizuho, Nagoya 467-8530, Japan Telephone + (81) 52-872-7181	Equity-method affiliates	2
Established	May 5, 1919	Employees	NGK 4,547 Consolidated 20,077
Paid-in capital	70.0 billion yen	Stock exchange code	5333
Net sales	559.2 billion yen (consolidated, for FY2022)		

NGK Group Website

This booklet is an archive of our sustainability initiatives as of the end of September 2022 under the title of the NGK Sustainability Website Data 2022 (PDF). Our website also has sustainability information, in addition to detailed corporate information and investor relations.



Sustainability

<https://www.ngk-insulators.com/en/sustainability/>



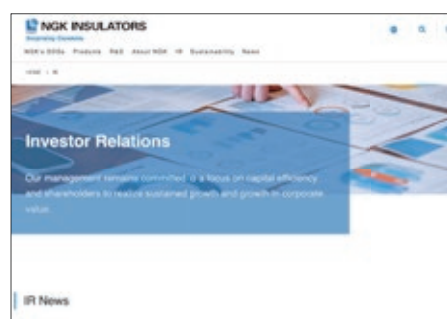
NGK REPORT 2023

<https://www.ngk-insulators.com/en/sustainability/pdf/2023/ngk2023.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, 2023)**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.
 NGK LOGISTICS, 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 INSULATORS OF CANADA, LTD.
 NGK CERAMICS MEXICO, S. DE R.L. DE C.V.

Europe, Africa

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.
 NGK CERAMICS SOUTH AFRICA (PTY) LTD.

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 2023 under the title of the NGK Group Sustainability Website Data 2023 (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, 2022 to March 31, 2023; 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.

Third-Party Assurance

Deloitte.

デロイト トーマツ

(TRANSLATION)

Independent Practitioner's Assurance Report

September 8, 2023

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 CO₂ emissions (Scope 1 and 2) indicated with ☒ for the year ended March 31, 2023 (the "CO₂ Information") included in the "NGK Group Sustainability Website Data 2023 (PDF)" (the "Report") of NGK Insulators, Ltd. (the "Company").

The Company's Responsibility

The Company is responsible for the preparation of the CO₂ Information in accordance with the calculation and reporting standard adopted by the Company (stated in the Report, Material Balance Calculation Basis). CO₂ quantification is subject to inherent uncertainty for reasons such as incomplete scientific knowledge used to determine emissions factors and numerical data.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. We apply International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the CO₂ 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 CO₂ 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 2023

■ For more information:
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Published in November 2023