



NGK INSULATORS

Integrated Report

NGK REPORT 2025

Surprising Ceramics.

Surprising Ceramics.

The NGK Group has been using unique ceramic technologies to create innovative products for over 100 years.
We will continue offering surprising products that provide new value to the world.

Editing Policy

About the NGK Group Vision: Road to 2050

At a time when the world is entering a period of great change, we formulated the NGK Group Vision: Road to 2050 in April 2021 in order to become a corporate group that creates new value for today's society as well as for the society of the future. The NGK Group Vision envisions what the future society may look like in 2050 and establishes the social issues that we will focus on, which are the realization of carbon neutrality (CN) and digital society (DS). For CN and DS, we will work to expand the fields in which our products are actively utilized by further refining the unique ceramic technologies that we have accumulated so far. To that end, we have established the Five Transformations to indicate “what we must do” in the future in order to achieve self-transformation.

Purpose and Positioning of NGK Report 2025

The NGK Group positions NGK Report 2025 as a critical communication tool. The Report provides a comprehensive summary of our Group's enterprise value improvements. The objective of this Report is to help shareholders, investors, and our many other stakeholders gain a better understanding of our Group. This Report is comprised of four sections, including a section on specific efforts related to new value creation and a section outlining the initiatives we will undertake towards realizing the NGK Group Vision: Road to 2050.

During the creation of the NGK Report, we referenced the Integrated Reporting Framework by the International Integrated Reporting Council (IIRC) recommended by IFRS Foundation and Guidance for Collaborative Value Creation by the Ministry of Economy, Trade, and Industry.



Responding to the Concerns of Stakeholders

Our editing policy is strongly rooted in our commitment to responding to the questions and concerns we receive from all stakeholders, including shareholders and investors to the extent possible.

Applicable Organizations

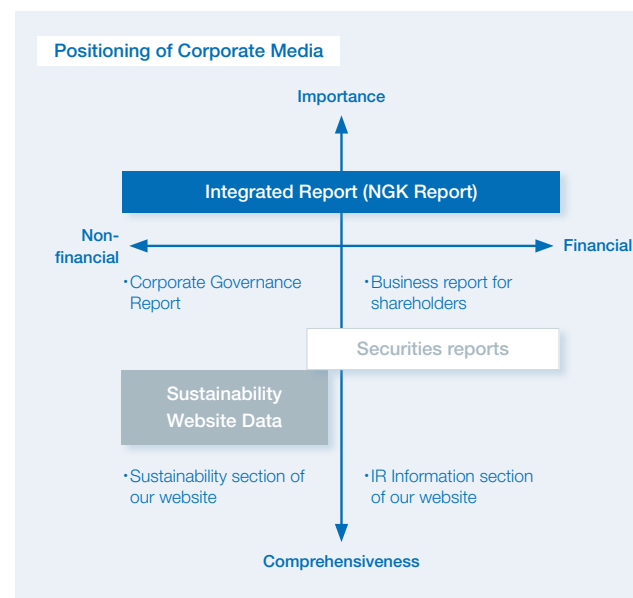
Applicability will vary with each organization. As such, applicable organizations are indicated in report articles and alongside the presented data.

Applicable Period

April 1, 2024 to March 31, 2025
(some information not pertaining to the current fiscal year is also included)

About Forward-Looking Statements

Earnings forecasts and other forward-looking statements indicated in this report are based on currently available information and certain assumptions deemed reasonable at the time of creation. However, please note that it is possible actual results could differ from the statements presented in this report due to various factors.



NGK Report

Target readers:
Mainly institutional investors and other stakeholders



Sustainability Website Data

Target readers:
ESG investors and other stakeholders

About the Publication of NGK Report 2025



Executive Officer
In Charge of Sustainability
Management Dept., Corporate
Communications Dept.

Ryo Ishihara

The NGK Group produces this Integrated Report out of a commitment to conveying to our stakeholders, including our shareholders and investors, how we intend to achieve continuous growth and continue providing new value to society. After publication, the feedback we receive from our many stakeholders is shared with management and discussed during deliberations by relevant departments such as the Corporate Planning Office and the Finance & Accounting Dept. on how to improve the structure and content of the Integrated Report.

NGK Report 2024 garnered a particularly large number of concerning the following issues: 1) Business portfolio conversion, 2) Analysis of the current status of and problem awareness related to existing businesses, 3) Analysis of factors behind PBR falling below 1x, and 4) The link between non-financial information and

resolving social issues. This fiscal year, we focused on providing more in-depth content to meet stakeholder expectations as much as possible. Our hope is that this Integrated Report will enable a deeper understanding of the NGK Group.

We view the Integrated Report as an important tool for dialogue with our stakeholders and hope to continue receiving your frank and honest opinions.

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NGK Report 2025 Creation Process



Key Points of NGK Report 2025

POINT 1 Business Portfolio Conversion

The President and our Director in Charge of Finance and Sustainability each explain how NGK will go about converting our business portfolio.

Message from the President [P.03](#)
Message from our Director in Charge of Finance and Sustainability [P.21](#)

POINT 2 Analysis of Existing Businesses and Problem Awareness

We incorporate interviews with various business group executives to convey the current status of and issues facing existing businesses, and our medium- to long-term strategy for growth.

Message from the President [P.03](#)
Message from our Director in Charge of Finance and Sustainability [P.21](#)
Business Strategy by Segment [P.29](#)

POINT 3 Analysis of Factors Behind PBR Falling Below 1x and Measures for Improvement

We provide our own in-depth analysis of the factors behind why PBR has fallen below 1x and introduce improvement measures to be implemented moving forward.

Message from the President [P.03](#)
Message from our Director in Charge of Finance and Sustainability [P.21](#)

Message from the President

Steadily Improving Enterprise Value

Taking on the challenge of rapidly identifying trends in an evolving market to create new value centered on ceramic technologies.

President

Shigeru Kobayashi

TOP MESSAGE

We live in times where volatility is increasing worldwide, and market needs are changing continuously. At NGK, we are embracing the challenge of self-transformation by enhancing the strengths cultivated through our unique ceramic technologies while also converting our business structure. NGK will achieve sustainable growth by identifying growth opportunities in the carbon neutrality (CN) and digital society (DS) domains and providing new value that resolves future social issues.

Looking back on FY2024

During FY2024, we achieved a certain level of numerical success as net sales and profit both outperformed the previous fiscal year. However, in honesty, it is difficult to attribute that performance to internal efforts due to the significant impact of sales being boosted by yen depreciation. In reality, we were handed these results on a silver platter and moving onto the next phase of growth will be impossible if we allow ourselves to become complacent.

In retrospect, FY2024 was a year in which both our strengths and shortcomings became evident. With the package business for communications devices, our projections concerning the contraction of the smartphone, personal computer, and home appliance markets missed the mark in recent years. Added to that was the fact that we were late in responding to such market changes. This resulted in having to record significant operating losses and impairment losses. There is no denying the fact that we were overly optimistic in our market projections and were overconfident in both our own technology and our ability to respond to the market. These are outcomes that we are taking very seriously. This was a painful reminder that the speed of change in the electronics domain is exponentially faster than our traditional fields of expertise, and of just how tough of a competitive environment we face.

The very structure of the world is changing dynamically.

With friction between the US and China, geopolitical risks, and the advancing international trend of protectionist policies, our operating environment is more volatile than ever before.

Looking at the automotive industry, the world was forced to recognize the overwhelming cost competitiveness of Chinese battery electric vehicles (BEV) and batteries. In response, Western nations moved to protect their domestic industries by strengthening regulations and tariffs. These actions had the effect of delaying global BEV adoption. The shift towards a renewed appreciation for hybrid electric vehicles (HEV) and plug-in electric vehicles (PHEV) in a positive light is deeply meaningful for NGK as a company that specializes in technology that is based on the internal combustion engine.

From the perspective of economic security as well, various nations are focusing efforts on developing their own domestic semiconductor industries. This trend will certainly serve as a short-term tailwind for our products for semiconductor manufacturing equipment. However, in the long run, the formation of economic blocks and the collapse of free trade schemes is certainly not a preferable outcome for Japan.

With the economic environment changing at breakneck

speed, the question becomes: are we truly capable of adapting to such change? Are our strategies and structures keeping pace with market realities? FY2024 was a year in which I asked myself many such questions and, today, I strongly feel the importance of being able to flexibly respond to change and being more aware of our external environment.

Outlook for FY2025 targets amid a volatile external environment

NGK Group Vision outlines FY2025 earnings targets as net sales of 600 billion yen, operating income of 90 billion yen, net income of 60 billion yen, return on equity (ROE) of 10%, a dividend payout ratio of 30%, and profit per share of 200 yen. At present, we are somewhat bearish on our ability to achieve operating income of 90 billion yen but are quite optimistic about all other metrics.

We expect to fall short of our operating income target due to cost increases attributable to inflation and the impact of tariffs as well as insufficient improvement to unprofitable businesses. This conservative outlook on operating income is rooted in the volatility in our external environment. In particular,

Improve enterprise value
by engaging in the selection
and concentration of existing businesses
to enhance earning potential.



the direction of US tariff policy can have a direct impact on our business. In the Automotive Ceramics Business, there is a concern that a decline in automotive manufacturer profits due to increased tariffs could increase pressure on businesses throughout the supply chain to lower prices.

There has also been an impact on NAS® batteries, for which we are partnering with German comprehensive chemical manufacturer BASF, as it has become difficult to judge the feasibility and timing for moving onto the next stage. While overseas projects do generate a certain level of sales, we also face increasing raw material costs, thus such projects are not helping us secure profits. I believe we will need to carefully assess commercial viability moving forward.

At the same time, there are also some positive signs. In the DS domain, the rapid proliferation of generative AI is driving data volume expansion at an unparalleled pace. This is, in turn, driving significant growth in demand for semiconductor manufacturing machines. Data center-related capital expenditures have been very strong as the semiconductor industry is expected to double in size as we head towards 2030. During FY2025, we are anticipating a solid year-on-year improvement in earnings, and I am highly confident that we are on the right track in terms of our macro direction.

Elevating our PBR

As president, I am keenly aware that our price-book value ratio (PBR) has been below 1x for several years. NGK is advancing a three-way approach to improving our enterprise value. This approach entails enhancing capital profitability, ensuring growth potential, and upgrading non-financial value. At present, however, we have yet to produce satisfactory results. We engaged in company-wide initiatives to enhance capital profitability, which directly correlates to our stock price, with the goal of achieving an ROE of 10% but have been unable to reach this level since FY2022.

One of the reasons for this was our stubbornness with unprofitable businesses that were producing losses or failing to

reach internal ROIC standards (Operating income ÷ Business assets). That stance resulted in dragging down overall profit for NGK. One of my biggest regrets is that we did not establish clear deadlines for decision-making concerning whether to rehabilitate or withdraw from such businesses.

I have first-hand experience being involved in the reorganization of overseas business, so I deeply understand the desires of local teams to keep a storied business running and the determination to make a struggling business profitable. However, I have come to understand that, from the perspective of improving profitability for the entire company, sometimes we must make tough decisions.

There is also the reality that past Outside Directors, including the three board members newly appointed in FY2024, have pushed us to make such management decisions. The opinion that we should withdraw from unprofitable businesses is tough, but also frank and rational. This is something that we have come to accept internally. While I am always prepared to make decisions when it is time to withdraw from a business, having such an external perspective has played a major role in helping us increase the quality and speed of our decision-making as a company.

We have also worked steadily on shareholder returns. We have largely been able to maintain a dividend payout ratio of 30%. We are also conducting share buybacks in the range of 10 to 15 billion yen annually, which, when combined with dividends, places us at a total shareholder return ratio exceeding 50%. We will continue working to improve our capital profitability by balancing both growth and shareholder returns.

Business structure conversion that responds to change

For over 100 years, we have flexibly reorganized our business structure in response to the changing times and changes in society. This is an approach we continue to embrace. We will convert our business portfolio under clear policies outlined

from both the short- and medium- to long-term perspectives.

As a short-term perspective, it is critical that we maximize the inherent profitability of existing businesses. The Environment Business (EN) saw major change in its market structure due to the rise of the Chinese BEV. Due to stagnant EV adoption, it appears that the shift to EVs has been pushed back by five years or so. Amid this resurgence of the internal combustion engine, the products we have cultivated over our many years in this field are currently seeing stable demand. While other companies are withdrawing from the market, this is a domain in which we have maintained our strong competitiveness, so we will steadily reap the benefits of being a lasting player in the market. We will then use the EN Business as a profit platform while fostering CN and DS as growth businesses.

At the same time, we have a heightened awareness of the need for selection and concentration for businesses struggling with profitability. We evaluate each business based on two core metrics: the NGK ROIC and sales growth potential. Moving forward, we will establish clear deadlines for businesses with no outlook for improvement with either metric to make policy decisions. For certain business, for example, NAS batteries and ceramic packages for crystals, we will continue to monitor the market environment while carefully considering all the possibilities. We will concentrate our allocation of management resources, including personnel reassignments, in fields with growth potential.

Progress on NV1000 and growth strategy

As a medium- to long-term perspective, we are working towards New Value 1000 (NV1000), the goal of generating net sales of 100 billion yen or more from new business. In the CN and DS domains, we will create new businesses directly linked to resolving social issues. Including projects in the development phase, we see potential for net sales of around 200 billion yen, so we feel we are advancing steadily towards this goal. In the DS domain, in addition to growth in the



**Create new growth pillars
in CN/DS domains
to achieve New Value 1000.**

semiconductor industry, business related to the ceramic manufacturing equipment and components in which we specialize, is growing at a higher-than-expected pace and drives sales of the jigs and HICERAM Carrier support wafers in which we specialize. Amid an explosive increase in data volume and the spread of generative AI, HICERAM products support high-end semiconductors. The transparency and high rigidity of HICERAM products have been highly evaluated, leading to increased inquiries from customers. We will continue to strengthen our supply capacity to ensure that we capture the growing demand in this field.

In the CN domain, we are focusing on R&D of ceramics for direct air capture (DAC), which directly adsorbs and captures carbon dioxide from the atmosphere, and sub-nano ceramic membranes, which separate specific gases or liquids from mixed gases and liquids at the molecular level. These are essential technologies for a decarbonized society. We expect to see demand growth for these technologies in the early 2030s. Based on the outlook that DS will be the domain of focus through 2030 while CN will take center stage from 2030 onward, we are positioning these technologies as the core of NV1000. There are limitations to what our company can do alone to realize the social adoption of technologies in these domains. This makes collaboration with various partners around the world critical. We consider M&A to be one viable method. We are currently in the process of acquiring BORSIG, a German company with a 188-year history, to acquire functions we lack as well as secure a new customer base. We expect to generate synergy on multiple levels, including combining our ceramic materials with BORSIG's engineering know-how and fusing BORSIG's strengths in organic film with our ceramic technologies. Through business development founded in a co-creation type of M&A, we will deliver products and solutions that provide higher added value to society. The NV1000 goal of 100 billion yen does not include sales from BORSIG. We are positioning this acquisition as a driver of additional growth.

Using market-in concepts to convert technology to value

Our greatest strength lies in our technological capabilities and our insight into ceramics that we have cultivated for over 100 years. We have achieved numerous technological breakthroughs by demonstrating our true worth when faced with difficult requests from customers.

However, as a parts manufacturer, we are in a unique position that sees us with limited opportunities to hear from end users. To continue creating high value moving forward, it is extremely important that we adopt a market-in approach. This means, listening to what the market is saying to identify current needs and the issues customers are facing. To link our technological capabilities to market needs, three years ago we established the Corporate NV Creation. Working in collaboration with Corporate R&D and the Corporate Manufacturing Engineering, we have worked to accelerate the creation and commercialization of new themes.

Our ceramics expertise is built on a vast history of successes and failures. Every experience of trying but failing is passed down through generations in the form of experiment results and technical verification. In recent years, we have used materials informatics (MI) to digitize this accumulated knowledge and create a foundation for future technological innovation. We have high hopes for the use of MI, which we believe has the potential to shorten material development times by up to 90% compared to current standards. Also essential is the promotion of our digital transformation beyond MI. We will proactively adopt the latest technologies, including generative AI, to speed up the search for new applications and improve our operational efficiency.

Regarding the use of intellectual property, we are shifting our stance from defending existing businesses to going on the offensive by creating new businesses. We will promote business, development, and intellectual property strategies based on an integrated approach while also using IP Landscape® to strengthen our assessments of technology and market trends.

Human resources with a pioneering spirit are the driving force of the NGK Group

Human capital is the driving force of the NGK Group. People conceive ideas, create technology, build equipment, and run operations. It is to these cumulative efforts that we owe the growth we have achieved thus far, and this is something that will remain unchanged moving forward.

However, we also now exist in an era where society and the market are changing so rapidly that conventional approaches no longer work. While the NGK Group has many earnest and sincere employees, our cautious stance of avoiding risks to avoid failure can also be a weakness. One of the values embraced in the NGK Group Philosophy is, “Quality of People, Embrace challenges and teamwork.” As this philosophy suggests, it is important that all employees take on challenges as a personal endeavor and take one step forward in their daily routines. I believe that the driving force for the entire company comes not only from taking on big challenges such as launching new businesses, but also from the small challenges like trying new methods or volunteering for overseas projects.

The Human Resources Department is also strengthening its systems to respond to the challenges undertaken by our team members. One example of this is the creation of a new Key Personnel System. In addition to strengthening our ability to assign the right people to the right jobs, we are providing opportunities for employees who want to hone their expertise and enhance their ability to survive in these rapidly changing times.

Also essential is tapping into the diverse opinions and perspectives of employees both in and outside Japan. While a highly homogeneous organization has a sense of stability, there is a limit to the speed at which it can create new businesses. As a company that has grown on the strength of providing globally consistent quality for products such as insulators and HONEYCERAM®, we must proactively work to create an environment in which people with different values

People, technology, intellectual property.

Contributing to the resolution

of social issues by maximizing

our management resources.



and backgrounds can thrive. Advancements in AI are removing language barriers, so we will further work to reflect the voices of our overseas employees in our management and share best practices. We will also actively welcome personnel with diverse experiences and skills, including mid-career hires.

We formulated the NGK Group Human Capital Management Policy to summarize our approach to human capital. We have also exchanged opinions with domestic group companies. We will continue to place importance on dialogue with employees to ensure that this policy permeates the Group and to further strengthen our global human resources strategy.

Existing as a company that is needed and trusted by society

In the spring of 2026, our company will change its name to NGK Corporation. Behind this change is our strong commitment to our current situation and our future. Currently, sales of insulator products account for less than 10% of total net sales as our core business undergoes a major conversion.

With approximately 70% of our sales coming from overseas and over 60% of our employees being of foreign nationality, the NGK brand is already widely recognized overseas. As a result, there were growing calls, both internally and externally, for NGK to undergo a name change. This change reflects our commitment to our next stage, which is converting our business structure as outlined in the NGK Group Vision and increasing our value on the global market.

Over the years, we have taken on the challenge of resolving social issues through approaches centered on our unique ceramic technologies. We will never waver in this basic approach, even in times of great change. We will not fear challenges when tackling difficult themes, and we will not stop in our technological development. We will continue to create products that are truly valuable to society. Under our new name, we hope to exist as a company that is needed by society by providing our technologies and products.

As president, my greatest goal is to build the NGK Group of which all stakeholders can be proud and continue to trust. To achieve this, we will continue to innovate and take on new challenges.

Our Philosophy and Vision, and How We Realize Them

On April 1, 2026, we will change our corporate name to NGK Corporation. Aiming for even greater global growth, we will increase the sense of unity within the NGK Group and accelerate efforts related to the business structure conversion that will help us realize our vision.

NGK Group Philosophy

Our Mission

**Enriching Human Life
by Adding New Value
to Society.**

Our Values

Quality of People	Embrace challenges and teamwork.
Quality of Product	Exceed expectations.
Quality of Management	Social trust is our foundation.

NGK Group Vision

Road to 2050

What we want to be

**A company to contribute to
carbon neutrality and digital
society with our unique
ceramic technologies**

What we must do

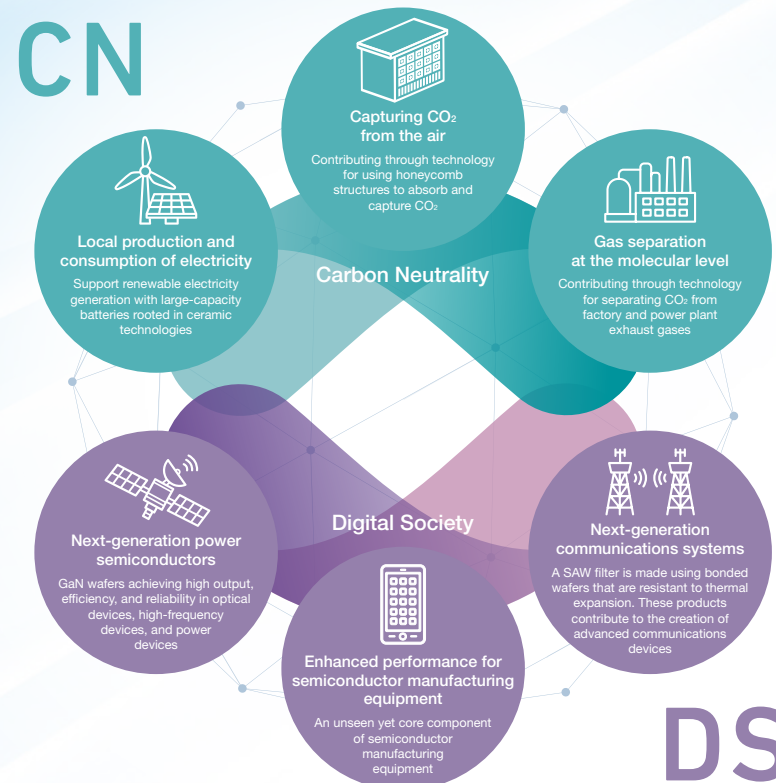
**Convert our business
structure through
5 Transformations**

NGK Group Corporate Business Principles
NGK Group Code of Conduct



Firm compliance with NGK Group
Basic Guidelines for Compliance Activities

Contributing to Carbon Neutrality (CN) and a Digital Society (DS)



Society in 2050 is predicted to undergo major changes driven by an increased focus on environmental conservation, growth in the adoption of renewable energy, and advances in digital technology. Looking ahead to this future, the NGK Group is focusing on two domains: Carbon Neutrality (CN) and Digital Society (DS). We will apply our unique ceramic technologies to resolve social issues. By further evolving the ceramic technologies we have cultivated for over 100 years, we will resolve problems that have proven difficult to address through conventional technology. Through these efforts, we will help create a safe and comfortable society that coexists with the environment. Moving forward, the NGK Group will continue providing new value through the development of innovative products.

Self-Transformation to Realize Our Vision

What we must do to become what we want to be is implement Five Transformations to convert our business structure.

We will aim for sustainable growth by responding to rapid changes in our business environment and increasing our ratio of CN and DS-related products.

5 Transformations

ESG as a foundation of management

- E** NGK Group Environmental Vision: Contributing to achievement of CN through products and services
Realizing net zero CO₂ emissions in our own activities by 2050
- S** Solutions to social issues through businesses
Recruitment and cultivation of human resources
- G** Gradual reform of governance
Development of a culture of openness

Achievement of 'New Value 1000'

- Attain more than 100 billion yen of sales in newly launched businesses*1 in 2030
- Investment of 300 billion yen in R&D over the next 10 years
Concentration in the CN and DS areas (80%)

*1 Businesses just launched in 2021 and to be newly launched in the future

*2 DX: Digital Transformation

Transform business models and corporate structure with digital technology

*3 NGK ROIC (see page 22)



Increase of earning power, creating a cycle for growth

- ROIC*3/Analysis and improvement of profitability in each business
- Strengthening entire process chain

Reinforcement of societal implementation of our products

- Improvement of cross divisional marketing capabilities
- Expansion of collaboration with outside partners
- Expanding solution business

Propulsion for the whole transformation

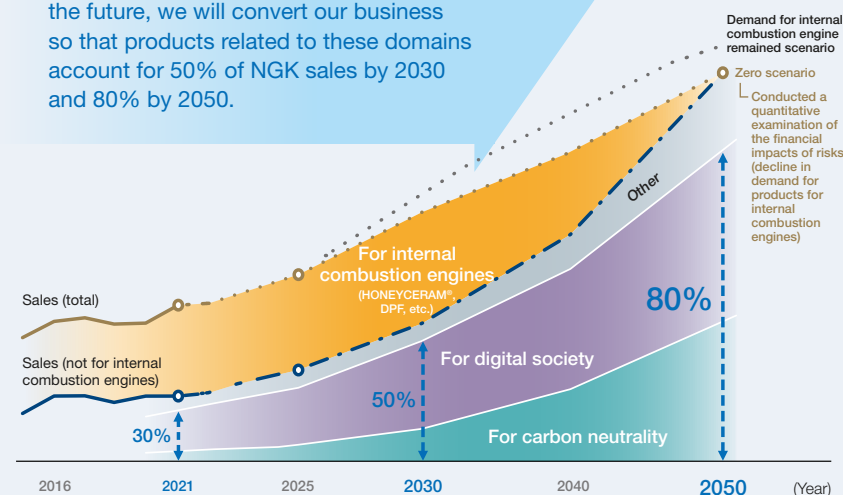
- Digitization of all processes in the company
- Training of IT liaisons in each division

The environment surrounding our group is undergoing rapid change, with worsening environmental problems on a global scale, advances in digitalization, and diversification of values and needs. To respond to such change, we are promoting self-transformation by not only creating value using our own ideas and technologies, but also by pursuing unconventional methods such as value co-creation through collaborations with other companies in CN/DS-related domains. We will place ESG at the center of our business management, increase our earning potential, create a cycle of growth, and advance our R&D and commercialization efforts. We will also promote DX as a driving force for overall transformation. Through these efforts, we will take on the challenge of creating new value in CN and DS-related domains.

Converting our business structure

Business structure concept for the future

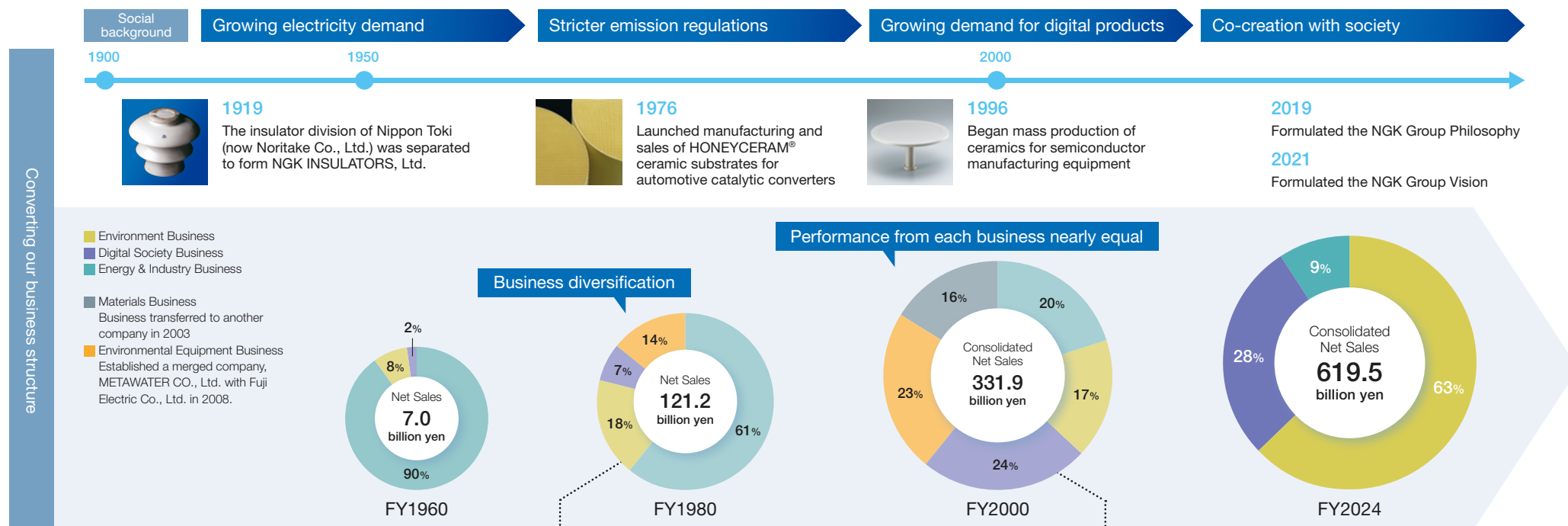
With expectations that carbon neutral and digital society will be growth domains in the future, we will convert our business so that products related to these domains account for 50% of NGK sales by 2030 and 80% by 2050.



EVs and other advancements are driving a once-in-a-century paradigm shift in the automotive industry. With ceramic substrates for automotive catalytic converters (HONEYCERAM®, DPF, etc.) and other products for internal combustion engines accounting for roughly 60% of net sales, the global shift towards EV adoption represents a serious challenge for the NGK Group. While we do project growth in products for semiconductor manufacturing equipment, our sustainable growth will depend on our ability to foster new businesses in the CN and DS-related domains to serve as future growth pillars. We will strengthen these initiatives, which could be considered our third founding as a company, and set increases in the net sales ratio of CN and DS-related products as milestones as we advance the conversion of our business structure.

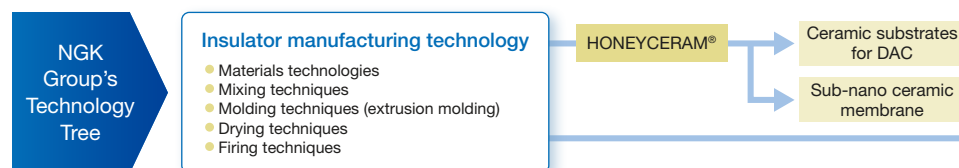
Sustainable Growth Trajectory

The NGK Group has achieved tremendous growth by converting our business portfolio to align ourselves with the changing times and meet the needs of society. Even when faced with dramatic changes in our operating environment, we will continue to strive for sustainable growth by offering solutions to social issues.



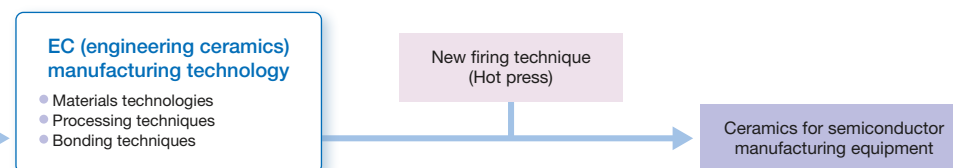
The succession of technology contributes to business structure conversion 1 : Ceramics for purifying automobile exhaust

Applying the materials, molding, and firing technologies cultivated through our original insulators business, we dramatically converted our business structure after successfully developing HONEYCERAM® ceramic substrates for automotive catalytic converters that addresses the social issue of preventing air pollution. HONEYCERAM® extrusion technology is currently also be utilized in ceramic substrates for Direct Air Capture (DAC) currently under development as well as in the manufacturing of Sub-nano ceramic membranes.



The succession of technology contributes to business structure conversion 2 : Ceramics for semiconductor manufacturing equipment

We combined the manufacturing technology cultivated through our work in engineering ceramics (EC) for products such as ceramic turbo chargers and rotors with newly developed firing technology (hot press) to develop ceramics that comply with the strict specifications required for semiconductor manufacturing processes. Business expanded with the increased demand for semiconductors driven by advancements in digital society. Today, this technology supports the DS business.



NGK Group Strengths

Since our founding, the NGK Group has applied the latest scientific techniques towards reevaluating the ceramics manufacturing methods that have been passed down over the ages. This has enabled us to identify the optimal combinations of processing parameters for each product. These skills and know-how we have accumulated for over 100 years represent the source of the NGK Group's competitiveness.

Unique Ceramic Technologies Developed over 100 Years of Accumulated Know-how

Materials Technologies

These technologies are used to create ceramics with dramatically superior properties by manipulating materials in a transformational manner based on a thorough understanding of the mechanical, thermal, electrical, and chemical properties of ceramics.

Production/Process Technologies

Many innovative and highly competitive products are made using manufacturing equipment developed by the NGK Group. These technologies are used to create a variety of products by combining molding technologies, such as casting, extrusion molding, and tape casting, as well as firing and processing technologies.

Analytical/Evaluative Technologies

These technologies are used to produce high-quality products through the use of advanced computer simulation technology that enables shorter development lead times and inspection technology that does not overlook even the slightest defects.

Unique Core Technologies



Unique ceramic technologies describes technologies that combine the core technologies unique to the NGK Group, such as Materials Technologies, Production/Process Technologies, and Analytical/Evaluative Technologies, like puzzle pieces to create products. Our unique core technologies have been accumulated since we started producing insulators more than 100 years ago. By combining these various technologies, we have created new products that have never existed in the world, diversified our businesses, and contributed to the resolution of different social issues. Our biggest competitive advantage is our ceramic technologies unique to the NGK Group which no other company can match.

Sources of our strength

A corporate spirit rooted in a commitment to serving society

Kazuchika Okura, the founding president of the NGK Group, said, "We do this to serve our country, and not for our own profit and provide Japan with its own, domestically manufactured insulators." That intention, which led to the decision to start domestic production of insulators, is still alive and well today in the NGK Group Philosophy of "Enriching Human Life by Adding New Value to Society." This corporate spirit has led to the birth of many products in the world.

NGK Group Philosophy, NGK Group Vision [P.08](#)

Over 100 years of accumulated materials technologies and production technologies

Since our founding, we have accumulated a variety of technologies with the stance of thoroughly bringing out the potential of a single technology. That has led to the creation of our unique ceramic technologies (indicates technologies that combine the core technologies such as Materials Technologies, Production/Process Technologies, and Analytical/Evaluative Technologies, like puzzle pieces to create products).

Intellectual Property Strategy [P.33](#)
Digital Transformation (DX) [P.34](#)

Co-creation with customers, suppliers, and research institutes

Through collaborative creation with customers, suppliers, and research institutes, we are creating a variety of new values, including the value created by solving problems together with customers, the value of realizing the quality improvement and stable supply of products, and the value that leads to innovation such as the development of new technologies and products.

NV1000 [P.25](#)
Co-creation facilities with business partners [P.27](#)

Human resources dedicated to taking on challenges with persistence

Human resources who are committed to taking on challenges many times without giving up, are particular about customer needs, are particular about products that only the NGK Group can produce, and are particular about differentiating technologies. These dedicated human resources are shaping the future of the NGK Group.

Human Capital Management [P.35](#)

NGK Group Five Types of Capital

The NGK Group utilizes five types of capital to achieve sustainable growth and make contributions to society. The five types of capital are: financial capital, intellectual/manufactured capital, human capital, social/relationship capital, and natural capital. Using this capital, we will provide products and services that contribute to carbon neutrality and the digital society.



Financial capital

Sound financial position

We secure a sound financial position by maintaining a high equity ratio and the ability to generate solid cash flow. We will continue to make strategic investments to respond to environmental regulations and advances in the digital society around the world, while also striving to achieve stable shareholder returns.

➤ Equity ratio	63.0 %
➤ Total assets	1,143.0 billion yen
➤ Operating income margin	13.1 %
➤ Free cash flow	41.6 billion yen



Intellectual/ manufactured capital

Accumulated technologies and manufacturing know-how

Our accumulated technological capabilities are applied to product development in a wide range of fields, and our manufacturing know-how serves as a critical foundation for the stable supply of high-quality products. In addition to proactive R&D investments to promote technological innovation, we are also committed to open innovation. Our wealth of ceramic technology data spanning some 100 years plays a vital role in establishing a competitive advantage.

➤ R&D expenses	29.6 billion yen
➤ Number of patents held	
	Japan 3,275
	Overseas 4,603
➤ Capital investment	48.8 billion yen
➤ Manufacturing sites	33 sites



Human capital

Group human resources across the globe

We have highly specialized human resources capable of maintaining and developing our unique ceramic technologies. As we are expanding our business globally, we also focus on recruiting and training human resources in each region. We work to instill our Group philosophy in employees at overseas sites and providing training opportunities in Japan to improve our global competitiveness.

➤ Number of employees linked by our Group philosophy	19,931
➤ Overseas employee ratio	60 %



Social/ relationship capital

Close relationships with customers and suppliers

The NGK Group supplies products to a wide range of industries, including the automotive, semiconductor manufacturing equipment, and energy industries, and we have secured long-term partnerships by building strong, trust-based relationships. We place importance on dialogue with shareholders and investors, and proactively disclose information related to sustainability. We will promote value co-creation with stakeholders based on trust-based relationships.

➤ Wide range of customer industries	
➤ Communication with shareholders and investors	
➤ Venture capital investments	



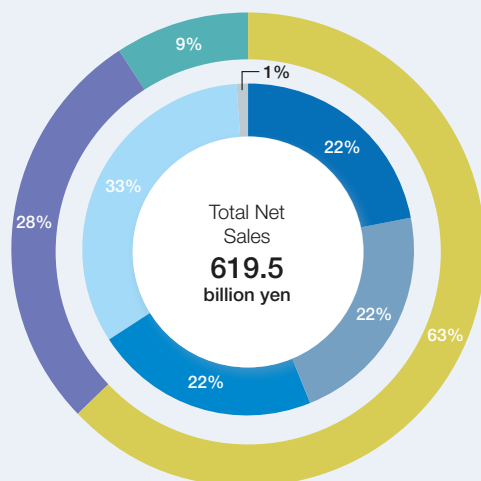
Natural capital

Nature-friendly manufacturing

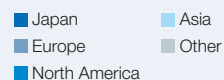
Based on the belief that protecting the global environment leads to the sustainable growth of society and businesses, we use energy efficiently and work to reduce CO₂ emissions and waste. We also actively invest in the development of products that contribute to carbon neutrality, and strive to reduce environmental impact, not only in our own production processes but throughout our entire supply chain, including procurement.

➤ Energy consumption	2.20 TWh
➤ Water consumption	1.40 million m ³
➤ Raw materials	120,000 metric tons
➤ Chemical substance emissions	96 metric tons
➤ Renewable energy usage rate	26 %
➤ Recycling rate	99.6 %

At a Glance (as of March 31, 2025)



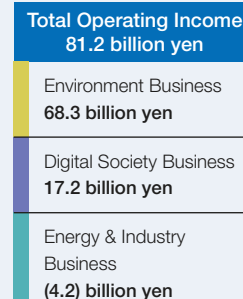
Sales by Region



Sales by Business Segment



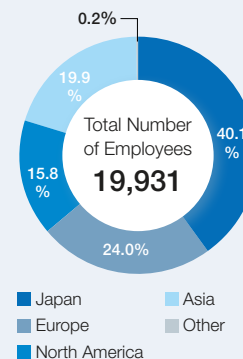
Breakdown of Operating Income by Business Segment



Number of global sites

18 countries
35 sites

Employees by Region



Overseas employee ratio

60%

Outside Directors

4

Ratio of female directors

30%

Ratio of female managers (Group total)

8.6%

Return on Equity (ROE)

7.8%

NGK ROIC (return on invested capital)

12.1%

Capital Expenditures

48.8 billion yen

R&D expenses (ratio of net sales)

4.8%

GHG Emissions Scope1

210,000 metric tons

GHG Emissions Scope2

330,000 metric tons

GHG Emissions Scope3

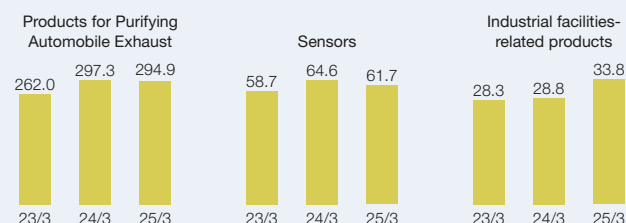
3,750,000 metric tons

Environment Business

Protecting clean air and supporting advancements in industry

Developing and manufacturing products that resolve environmental issues in a wide range of fields, including automobiles, chemicals, medicine, food, and nuclear power, to contribute to the development of a more prosperous society

Net sales by business (billion yen)

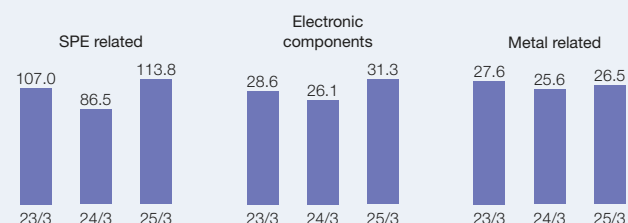


Digital Society Business

Responding with advanced technology

Developing and manufacturing products that contribute to advancements in IoT and artificial intelligence (AI), and to the advanced functionality, miniaturization, and weight reduction of electronics products

Net sales by business (billion yen)

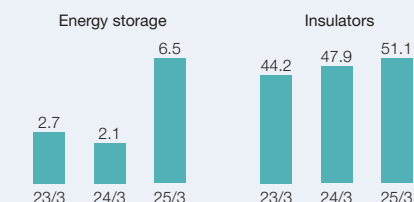


Energy & Industry Business

Supporting power supply

Developing and manufacturing products that support a stable energy supply and help realize a sustainable society

Net sales by business (billion yen)



At a Glance

Products created using our unique ceramic technologies are used in various parts of society, showing people a path to happiness and a brighter future.

NGK products playing an active role in society and a look at what coming down the pipeline

1 Ensures stable quality in semiconductor manufacturing processes
Ceramic heaters



2 High durability for use in aircraft parts
Beryllium copper processed products



3 Achieves precise positioning
Piezoelectric Actuators for HDDs



4 Boasts high dust collection performance
NGK Ceralec System, a high-temperature dust collectors

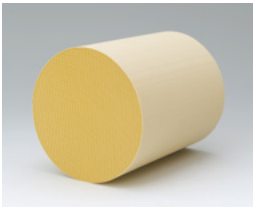


5 Safely treats low-level radioactive waste
Low-level radwaste treatment system



11 **Ceramics for Purifying Automobile Exhaust**

DPF and GPF are installed between the engine and the muffler to achieve high levels of both PM capture and low pressure loss.



12 **Ceramics for direct air capture (DAC)**

We aim to achieve low-cost CO₂ adsorption and capture by optimizing the combination of honeycomb structures, which have a proven track record as ceramics for purifying automobile exhaust gases, and CO₂ adsorbents.



13 **Sub-nano ceramic membranes**

Separating specific gases or liquids from mixtures such as mixed gases and liquids. We will promote development for a variety of applications, including separating hydrogen and methane in hydrogen transportation and separating CO₂ from exhaust gases from factories and power plants.



6 Supporting power supply
Suspension insulators



7 Large-capacity, long-life storage battery
NAS[®] battery systems for electric energy storage



8 Thin and compact semi-solid-state battery
Lithium-ion rechargeable battery "EnerCera[®]"



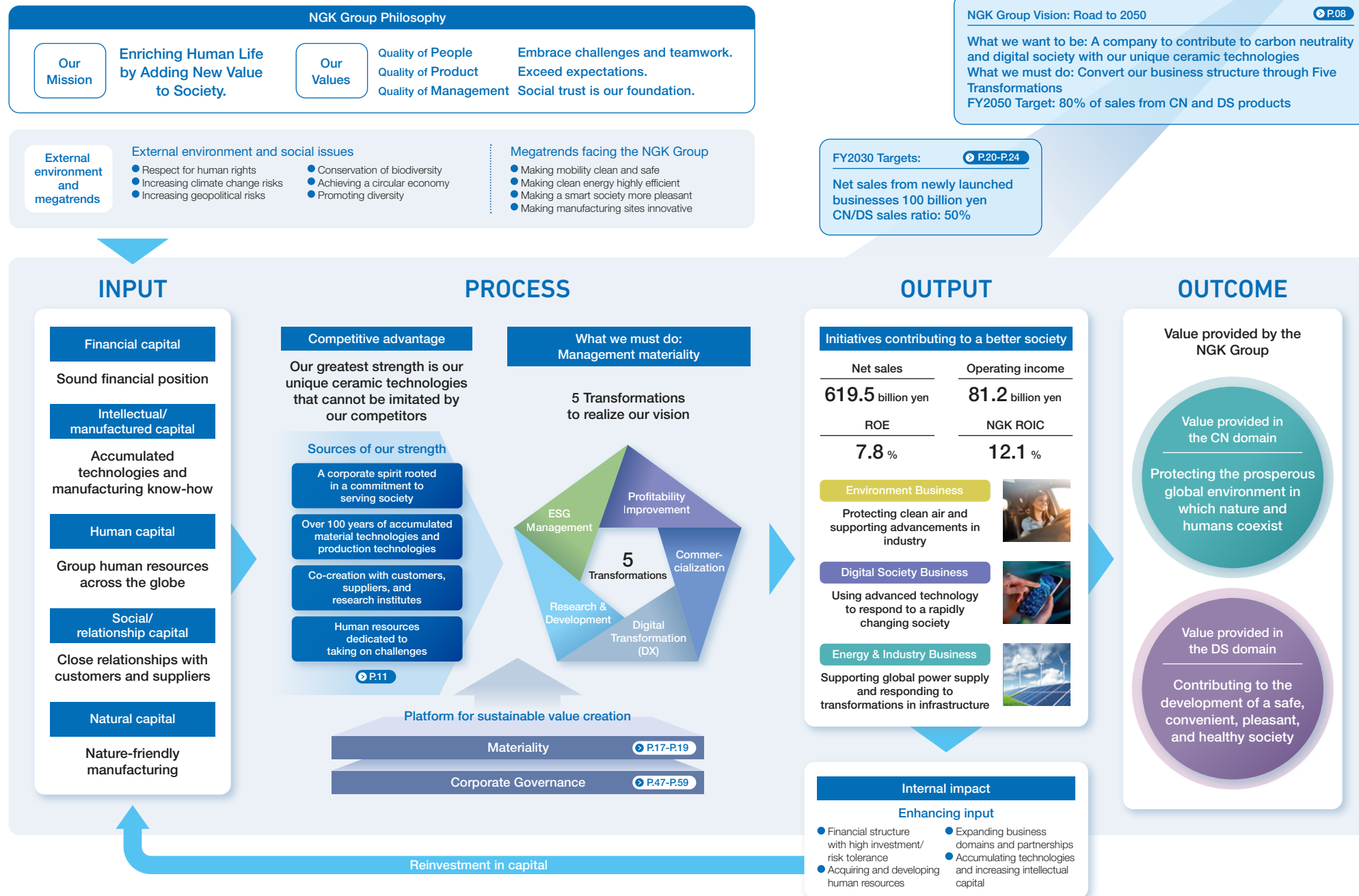
9 Composite wafers that are resistant to thermal expansion
Bonded wafers for surface acoustic wave (SAW) filters



10 Highly safe and can be installed anywhere
Nickel-zinc rechargeable battery



Value Creation Process



Sustainability Management

Basic Approach

The NGK Group operates based on our Group Philosophy of Enriching Human Life by Adding New Value to Society. We strive to earn the trust of society by using our unique ceramic technologies to provide new value that contributes to the realization of a sustainable society and responds to the expectations of society. We position this as the NGK Group's basic approach to sustainability. To achieve the NGK Group Philosophy, we will incorporate the concepts of Environmental, Social, and Governance (ESGs) and the Sustainable Development Goals (SDGs) as we work towards the realization of carbon neutrality and a digital society while also striving to achieve sustainable increases in enterprise value.



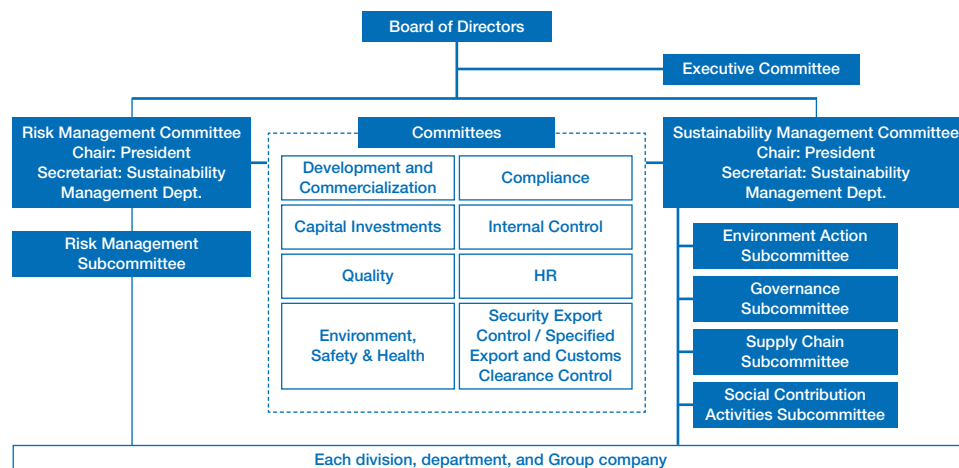
NGK Group Basic Sustainability Policy
<https://www.ngk-insulators.com/en/info/policies/#sustainability>



Governance

Risks and opportunities associated with sustainability issues, including elements related to NGK Group ESG, are organized and confirmed by the Sustainability Management Committee. The activities of the Sustainability Management Committee are reported to the Board of Directors at least once a year, and any necessary matters are discussed or reported by the Board of Directors and the Executive Committee before measures are implemented. The Sustainability Management Committee and the Risk Management Committee are chaired by the President and comprised of executive officers and general managers of head office divisions, business divisions, etc.

Sustainability promotion structure chart



Risk Management

The NGK Group responds to risks and opportunities associated with sustainability issues by having the Executive Committee and the Board of Directors identify important items as materialities.

When identifying materialities, various environmental and social issues considered as potential materiality are evaluated from two perspectives: the impact on business and the impact on society, stakeholder requests and expectations. Based on this evaluation, we created a materiality map, which the Sustainability Management Committee then uses to extract materiality candidates. After examining the risks and opportunities associated with each materiality and the main initiatives to be implemented in response, the Board of Directors and the Executive Committee selected the final materiality items.

These items are handled by the relevant committees and then compiled by the Sustainability Management Committee, which monitors and manages risks and opportunities (governance) and identifies and evaluates each item (risk management) through reports to the Executive Committee or the Board of Directors.

Strategy, Metrics, and Targets

We set KPIs and are working on all materiality items.



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

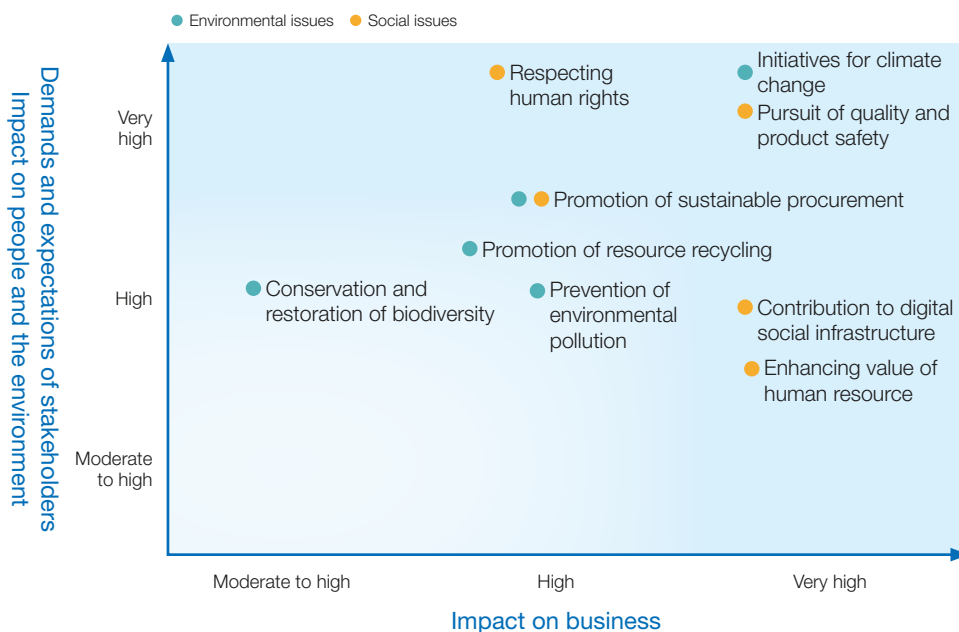


Materiality

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

Materiality Identification Process

Based on the NGK Group Basic Sustainability Policy, the NGK Group identified its materiality in April 2023. 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 material issues, our Group seeks to maximize value creation for both the Group and our stakeholders. We believe that doing so will lead to the realization of the NGK Group Vision.



Identification Process

Step 1

Listing of issues

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

Step 2

Evaluation of the importance of issues

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

Step 3

Confirmation of validity and identification of materiality

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

Step 4

Setting KPIs

Regarding Materiality management, we have set items to work on, KPIs, targets, and target achievement periods for each material issue. Following discussion by the ESG Management Committee, these were discussed and decided on by the Board of Directors.



Materiality

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





Materiality for Realizing the NGK Group Vision

Philosophy	Vision What we want to be	Materiality Items	Value/Impact on Society	Risks	Opportunities	Action Plans	KPIs
Enriching Human Life by Adding New Value to Society	A company to contribute to carbon neutrality and digital society with our unique ceramic technologies	Initiatives for climate change	We will promote carbon neutrality throughout our value chain and aim for business activities that achieve net zero CO ₂ emissions. We will utilize data and digital technology to accelerate the development of products that contribute to the environment. We will develop and offer products and services centered on our unique ceramic technologies to contribute to the realization of a carbon-neutral society by 2050.	- Shrinking of internal combustion engine-related markets - Effects of natural disasters on operations - Geopolitical risks - Increase in costs due to greenhouse gas reduction and energy conversion - Damage to brand reputation	- Expansion of CN-related business opportunities - Reduction of costs - Enhancement of our brand reputation	[NV1000] Development of carbon neutral-related products [Environmental Vision] Implement Carbon Neutrality Strategic Roadmap	Sales of new business products CO ₂ emissions CO ₂ emission reduction rate relative to base year Renewable electricity procurement rate Energy saving rate
		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.)	[Environmental Vision] Respond to recycling-oriented society (respond to circular economy) [Environmental Vision] Support a recycling-oriented society (reducing water resource risks)	Emissions generated per unit of sales Reduction rate of emissions compared to Business as usual (BAU) Recycling rate (domestic) Water usage per unit of sales (consolidated)
		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 markets	- Expansion of exhaust gas-related business - Expansion of air and water quality-related business - Expansion of nuclear power-related waste treatment business	Zero legal non-compliance issues - Education and confirmation of understanding - Enhance the database of registered facilities Zero serious accidents - Prevention activities (reassess equipment management issues) - Real-time status monitoring	Number of training participants Number of incomplete notifications Number of departments/bases currently promoting activities Number of status monitoring points
		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	[Environmental Vision] Harmony with nature	TNFD disclosure schedule (TNFD: Task Force on Nature-Related Financial Disclosures)
		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	Activities to increase customer trust - Improve work quality - Reduce quality risks	Number of serious product/service incidents



Materiality for Realizing the NGK Group Vision

Philosophy	Vision What we want to be	Materiality Items	Value/Impact on Society	Risks	Opportunities	Action Plans	KPIs
Enriching Human Life by Adding New Value to Society	A company to contribute to carbon neutrality and digital society with our unique ceramic technologies	Contribution to digital social infrastructure	We will establish strong information security to fulfill our duties as a member of a cultured and safe digital society. At the same time, we will supply products based on our unique ceramic technologies to make continuous contributions to global digital technology.	● Damage to brand reputation ● Cyber attacks ● Information leaks ● Increase in the cost of security enhancement	● Expansion of DS-related business opportunities ● Enhancement of our brand reputation	[NV1000] Develop digital society-related products, expand existing related products [Digital Vision] IT security Personal information protection activities	Sales of new business product Number of serious incidents Number of serious incidents
		Enhancing value of human resource	We will create prosperous and energetic workplace environments that take advantage of human resources with diverse experiences and perspectives. We will offer society new value by encouraging each employee to proactively take on challenges and promoting mutual growth.	● Compliance ● Damage to brand reputation ● Declining competitiveness of recruitment and outflow of personnel ● Human resource development ● Rigidity of internal systems	● Recruitment and retention of personnel ● Active participation of diverse personnel by DE&I promotion ● Growth through human resource development ● Productivity enhancement	Initiatives for reducing total working hours: Promote paid leave utilization (zero cuts to annual leave) Improving the rate of female managers Permeate and encourage men to take childcare leave, etc. Create a culture of utilizing diversity, including systems Develop DX human resources Improve employee engagement Zero legal non-compliance ● Education and confirmation of understanding ● Enhancement of facility notification database Zero serious accidents ● Prevention activities ● Activities to promote proactive mentality Enhancing mental health care (self-care/line care)	Score of the survey on workplace vitality Paid leave utilization rate Rate of female managers Rate of male employees taking childcare leave Score of the survey on workplace vitality Number of data utilization personnel Score of the survey on workplace vitality Number of training participants Number of incomplete notifications Disaster severity level Number of workplace discussions Rate of participation in mental care education by position
		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 the NGK Group 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	Conduct dialogue with internal and external stakeholders Conduct self-checks for NGK and Group companies Expand employees applicable for human rights education, update content	Frequency of conducting two-way exchanges of opinions with internal and external stakeholders Frequency of self-checks in compliance with RBA and other codes of conduct Frequency of human rights e-learning for executives and all employees
		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 CO₂ emissions, etc. ● Demands from markets regarding waste and recycling ● Depletion of raw materials and rare metals [Society] ● Damage to our brand reputation ● Impacts on our business partners ● Impacts on procurement	[Environment] ● Enhancement of our brand reputation ● Securing of stable procurement and reduction of costs through the utilization of alternative raw materials [Society] ● Enhancement of our brand reputation ● Building of a stable supply chain	Sharing the Supplier Code of Conduct Supplier assessment activities Scope 3 reduction activities	Rate of consent among major suppliers Frequency of sustainability surveys for key suppliers Scope 3 emissions reduction rate (compared to 2022)

The NGK Group aims to improve its enterprise value sustainably through both financial value and non-financial value.

					2030 Targets	FY2024 Results	FY2025 Forecast	Related pages
Financial value Non-financial value	10% or more ROE Business portfolio policy ESG Management	Capital policy (financial leverage)	Shareholder returns	(Average of three years) 30% Dividend payout ratio 3% DOE Flexible share buybacks	(Average of three years) 35.4% Dividend payout ratio 2.7% DOE	(Average of three years) 34.7% Dividend payout ratio 2.5% DOE	Message from our Director in Charge of Finance and Sustainability ➤ P.21	
			Application of interest-bearing liabilities	Ensured financial soundness D/E ratio of 0.4	D/E ratio of 0.35	D/E ratio of 0.30		
		NGK ROIC	Improved asset turnover	10% ROIC hurdle rate Asset turnover of 0.67 or more Operating income margin of 15% or more (2025 Vision Performance Targets)	12.1% ROIC Asset turnover of 0.55 Operating income margin of 13.1%	11.3% ROIC Asset turnover of 0.56 Operating income margin of 11.9%	Message from our Director in Charge of Finance and Sustainability ➤ P.21 New Value 1000 ➤ P.25 Business Strategy by Segment ➤ P.29	
			Increased profit margins					
		Sales growth rate	Commercialization	New Value 1000 Sales from newly launched businesses 100 billion yen or more (DS 50% / CN 30%)	— *	— *		New Value 1000 ➤ P.25 Intellectual Property Strategy ➤ P.33 Digital Transformation (DX) ➤ P.34 Human Capital Management ➤ P.35
			Research and development	R&D expenditure 300 billion yen / 10 years of investment (80% or more for DS/CN)	R&D expenditure 29.6 billion yen (roughly 60% for DS/CN)	R&D expenditure 36 billion yen (roughly 70% for DS/CN)		
		NGK Value-added	Decreased environmental impact	50% decrease from FY2013 CO ₂ emissions	(26%)	(32%)	New Value 1000 Environmental Initiatives TCFD TNFD ➤ P.25 ➤ P.39 ➤ P.40 ➤ P.41	

*We do not disclose management indicators for individual fiscal years.

Message from our Director in Charge of Finance and Sustainability



Increase capital profitability, and secure sustainable growth, and pursue both financial and non-financial approaches to maximizing enterprise value.

Hideaki Shindo

Director and
Managing Executive Officer

Amid dramatic shifts in our operating environment, we continue to take a heads-on approach to addressing the core issue of how to go about increasing our enterprise value. We will work to improve the profitability of existing businesses and strengthen our growth engine by launching new businesses and products. At the same time, we will also focus on improving PBR by advancing R&D that will serve as a source of future enterprise value, investing in human capital, and engaging in sustainability initiatives.

FY2024 Results and FY2025 Outlook

FY2024 resulted in record high net sales of 619.5 billion yen and a year-on-year increase in operating income to 81.2 billion yen. However, these results are partially attributable to the positive influence of yen depreciation as we recognized a gap in the performance trends of each business. Products for semiconductor manufacturing equipment (SPE) in the Digital Society Business recorded increased net sales and income on growing semiconductor demand for use in AI-related applications. However, the Energy Storage in the Energy and Industry Business faced difficult conditions due to various factors, including being forced to partially suspend plant processes due to the loss of a large-scale project from Germany, which resulted in the recording of impairment losses against held inventory assets. Looking at automotive-related products in the Environment Business, vehicle sales in China, Southeast Asia, and Europe were stagnant as demand waned but the shift from internal combustion vehicles to electrified vehicles (EV) was weaker than anticipated.

This fiscal year represents a milestone as we enter the fifth year since announcing the NGK Group Vision in 2021. We are close to achieving our net sales target of 600 billion yen but income will unfortunately fall below target figures. While this is partially due to changes in our operating environment that have greatly exceeded our original assumptions when we formulated our Vision, including foreign currency markets, labor costs, and fuel prices, this is also due to stagnant performance from growth businesses and delays in improving unprofitable businesses. As we work to achieve our 2050 Group Vision, I will advance initiatives to correct our trajectory from the perspectives of finance and sustainability. Not fearing change, we will continue to embrace challenge as we pioneer a path towards the future.

Major Management Indicators

	FY2023	FY2024		FY2025
	Results	Results	YoY	Figures published in April 2025
Net Sales (Billions of yen)	578.9	619.5	+7.0%	630.0
Operating Income (Billions of yen)	66.4	81.2	+22.3%	75.0
Net income (Billions of yen)	40.6	54.9	+35.2%	55.0
Operating Income Margin (%)	11.5	13.1	+1.6	11.9
ROE (%)	6.1	7.8	+1.7	7.6
Payout Ratio (%)	37.4	32.3	-5.1	35.2
Profit per share (yen)	133.65	185.96	+39.1%	187.65

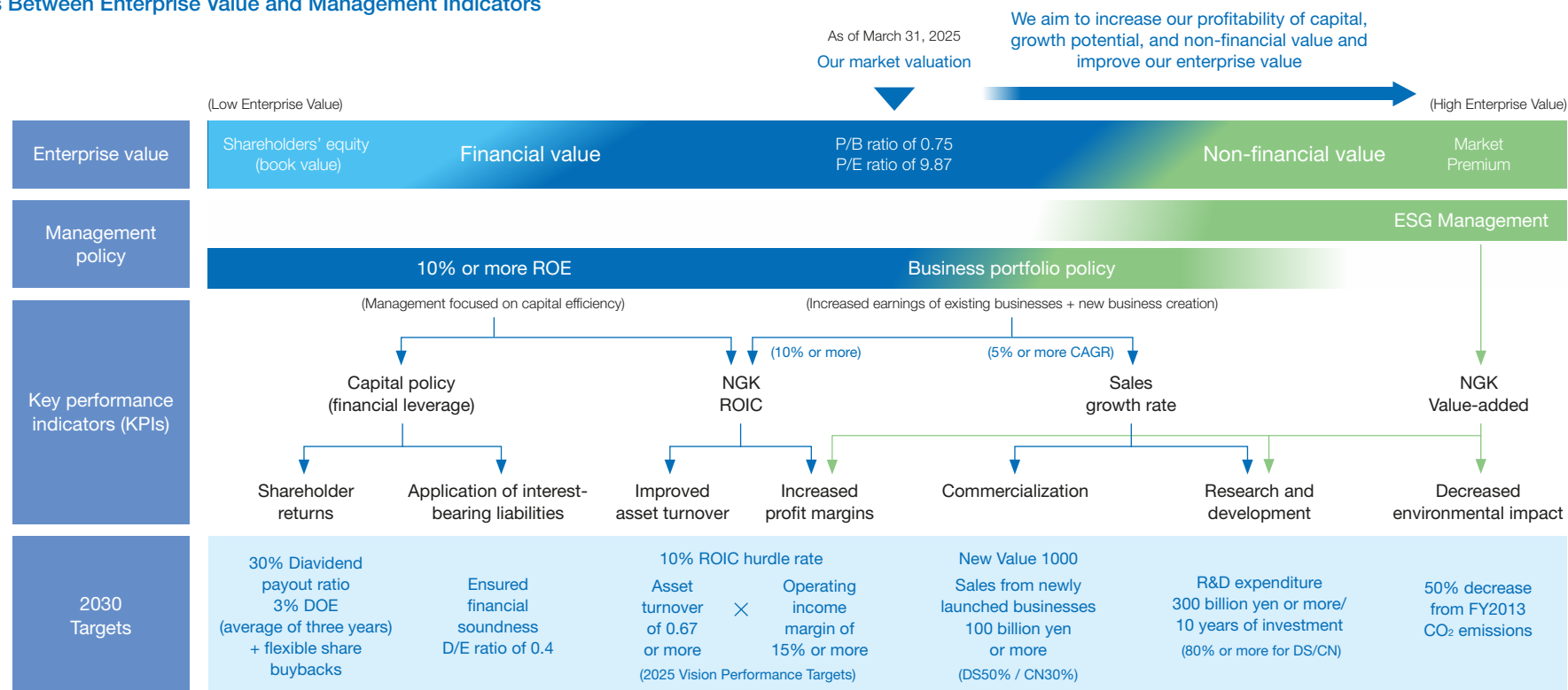
Improving PBR

Over the past few years, our stock price has remained at a price/book value ratio (PBR) of less than 1. The state of our stock price falling below net assets per share means that our enterprise value is not sufficiently appreciated by the market. We recognize this as a major issue that must be addressed. I believe this is because our return on equity (ROE), one of the structural elements of PBR, is below our goal of 10%. Furthermore, it is taking us time to improve performance from unprofitable businesses, which are driving down overall income. To address unprofitable businesses, we will develop multiple alternative scenarios in advance based on business conditions, clarify the KPI on which we will base decision-making, and set deadlines to ensure a

quick response in the event these efforts do not produce the intended results. Additionally, impairment losses on fixed assets continue to negatively impact net income. We will work to optimize the scale and timing of investments, while strengthening risk management by further improving the accuracy of our demand forecasts and accelerating our response to changes.

To improve our price-earnings ratio (PER), we will prioritize the allocation of returns generated through the Automotive Ceramics Business towards sustainable growth domains. We will aim to secure income by concentrating input on business domains that are projected to have strong medium-term growth potential and profitability, such as SPE and HICERAM Carrier (manufacturing tools and support wafers that support semiconductor performance enhancements). In addition to strengthening R&D and advance initiatives related to New Value 1000 (NV1000), our goal of

Relations Between Enterprise Value and Management Indicators



Message from our Director in Charge of Finance and Sustainability

generating 100 billion yen in new business product sales in FY2030, I also want to disseminate more detailed information to investors regarding promising new products.

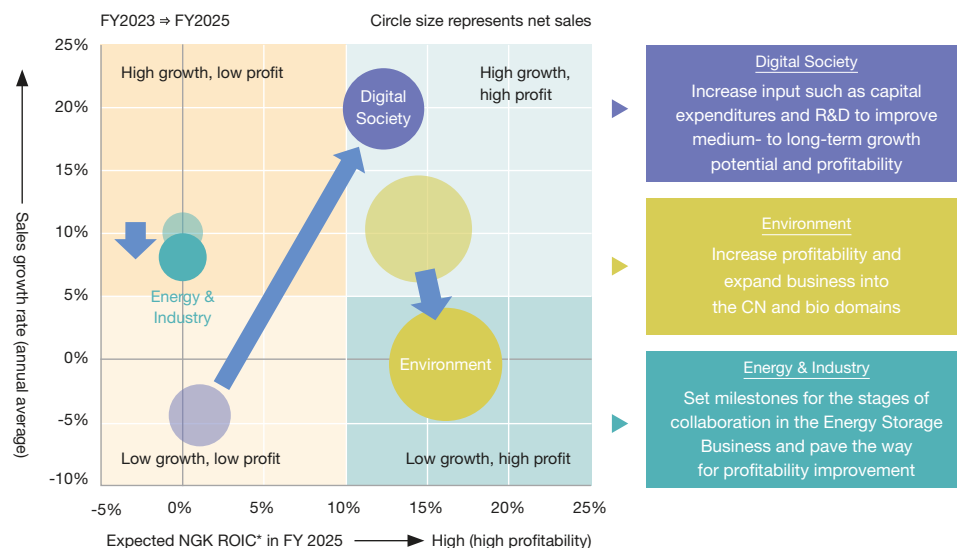
We also position M&A as an important method of realizing growth. In February 2025, we reached an agreement to acquire all shares of Deutsche KNM GmbH (DKNM), the holding company of Borsig GmbH (Borsig), which engages in the manufacturing and sales of process heat exchangers and membrane systems. We will apply Borsig's advanced engineering capabilities to accelerate the social implementation of the sub-nano ceramic membranes we are currently developing for the carbon neutrality domain and use the company's global customer network to increase growth opportunities. We have secured free cash flow for making investments in growth domains, and will continue to proactively engage in M&A that are aligned with our Vision and plans.

Our capital policy is based on increasing capital efficiency while maintaining financial soundness. Based on the belief that improving enterprise value over the medium- to long-term will lead to the creation of true value for shareholders, we will continue to proactively conduct growth investments and raise necessary capital through interest-bearing debt. Regarding shareholder

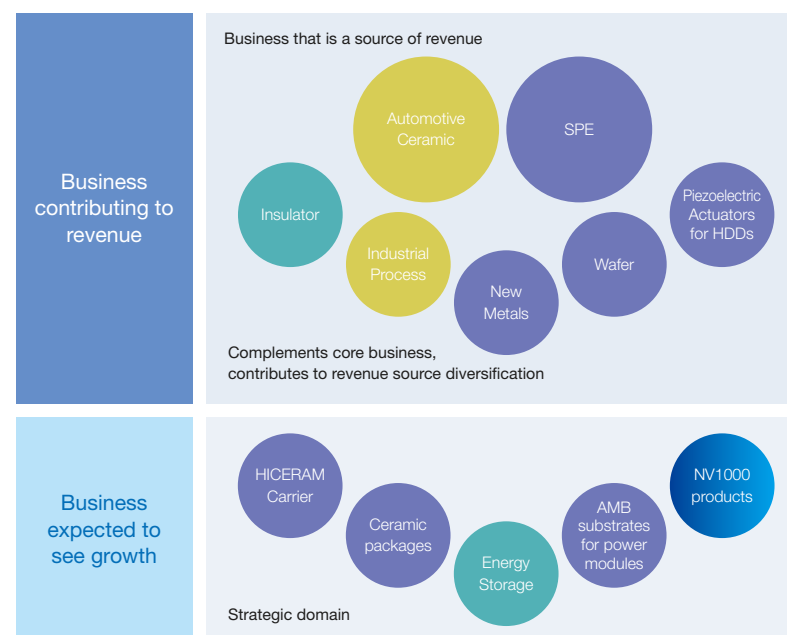
Stock price is one indicator of enterprise value. We will compare options and optimally allocate management resources towards the goal of increasing our stock price over the medium- to long-term.



Business Portfolio Policy



Evaluations of each business (conceptual)



Message from our Director in Charge of Finance and Sustainability

returns, we aim for a three-year average consolidated dividend payout ratio of 30% and a three-year average for dividends on equity (DOE) of 3%, which takes into account our outlook for cash flow.

In FY2025, we are planning to issue a dividend of 66 yen per share. We are also proceeding with share buybacks as a means of improving capital efficiency and implementing shareholder returns. In FY2024, we acquired 5 million shares (equivalent to 9.4 billion yen).

We will continue to implement shareholder returns by comprehensively evaluating factors such as the scale of growth investments, cash on hand, and our stock price.

The mission of a company is to increase its enterprise value through sustainable growth and make contributions to society. Stock price is one indicator of enterprise value. We will compare options and optimally allocate management resources towards the goal of increasing our stock price over the medium- to long-term.

Improving non-financial value

Strengthening non-financial value, which impacts medium- to long-term growth but is not reflected in financial indicators, is also essential to making medium- to long-term improvements in enterprise value. With this in mind, in FY 2022, we adopted NGK Value-Added as a management indicator for improving non-financial value. This indicator is calculated by subtracting CO₂ emission



We will strive to increase dialogue with stakeholders and clearly communicate our future growth strategy.

costs from operating income, adding back labor costs and R&D expenses, and multiplying the result by our ESG goal achievement rate. NGK Value-Added serves as an indicator for visualizing our sustainable growth potential.

Based on this indicator, we will achieve medium- to long-term growth by securing operating income that ensures short-term profitability while continuously working to improve the value of our human resources (human capital) and technological value (intellectual capital), which are the source of our future enterprise value. We will also continue to fulfill our social responsibilities, including reducing our environmental load and respecting human rights, as we engage in corporate activities that earn the trust of society.

In FY2025, we anticipate stagnate performance for NGK Value-Added due to the impact of the yen appreciation and tariffs. However, to achieve medium- to long-term growth, we will continue to invest in R&D and human capital with the goal of increasing added value at a rate of 5 to 10% per year.

Dialogue with stakeholders

Dialogue with shareholders and other stakeholders is an extremely important element in incorporating social perspectives and diverse values into management. Viewing stakeholder dialogue not only as a means of information dissemination but also as a forum for co-creating the future, we proactively seek to engage in dialogue with our stakeholders. We believe it is important that we not only fulfill our accountability to shareholders and investors regarding current business activities, but also that we clearly communicate our future growth strategy.

In addition to holding financial results briefings for institutional investors twice a year, we are also working to enhance overseas IR activities, including holding forums for overseas investors conducted by the lead securities firm, briefings for individual investors, and SR meetings for shareholders. I have personally been to IR events many times and have come to realize just how much interest investors have in our business performance and future growth.

The opinions we receive are reported to the Board of Directors and are sincerely evaluated and reflected in future management. We also strive to enhance information disclosure and increase dialogue with stakeholders as we continue to make steady efforts towards enhancing our enterprise value over the medium- to long-term.

New Value 1000

New Value 1000 (NV1000), the initiative to record 100 billion yen in new business and new products sales. Heading into the fifth year since launching the NV1000 initiative, Corporate NV Creation Group Executive and Executive Officer Takeshi Ohtsu discusses NV1000 progress and the Group's passion behind this initiative.



Takeshi Ohtsu

Executive Officer
Group Executive, Corporate NV Creation

Changing our Mindset to Accelerate New Business Development

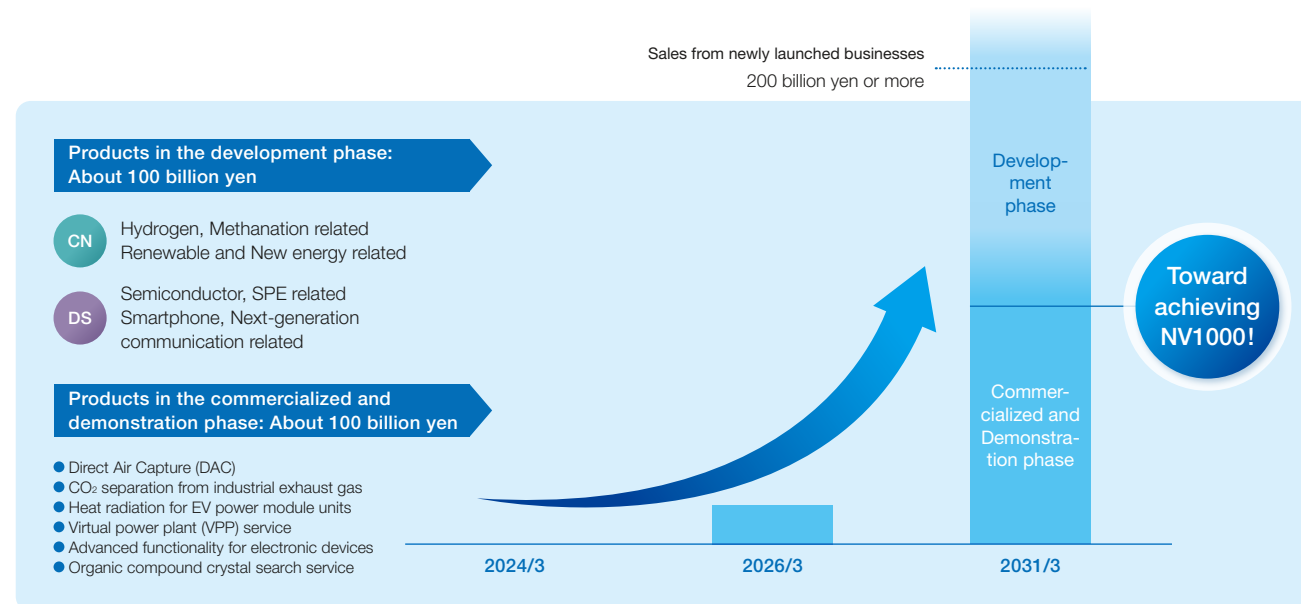
Accelerating reforms to achieve NV1000

FY2024 was a year in which we made tangible progress towards NV1000, including taking concrete steps towards commercialization for several new businesses and products. In addition to actual business launches and the start of marketing, for other product such as direct air capture (DAC) ceramics and nitrogen separation membranes, we also collaborated with customers to begin the validation testing phase. Our sales expectations for 2030 are roughly 100 billion yen from products that have already been commercialized or that are currently in the validation phase. Additionally, we are working on the assumption of roughly 100 billion yen from products in the development phase. As such, I believe that achieving net sales

of 100 billion yen from new business and products by 2030 is a sufficiently feasible goal.

At the same time, I also think that taking on additional challenges and implementing new reforms will be essential to accelerating our efforts as we seek to increase the probability of achieving NV1000 and look further ahead into the future.

Specifically, we must further strengthen alliances between relevant departments to increase development speed and respond to client and market demands in real time. Additionally, we need to permeate a mindset of working from the customer perspective throughout the Group. We must strive to beyond applying our technology to create products and services. Instead, we must advance a framework for matching customer and market needs with our technology. By increasing contact



New Value 1000

points with customers and implementing like a high-speed cycle centered on the scientific method (hypothesize, verify, and revise), I believe we can pursue value desired by customers and increase the likelihood of success for new business.

Undergoing mindset reform will be the key to addressing these issues. I want to promote a mindset where, instead of building up successes based on what we are able to do, we first envision what we want to be and then take a backcasting approach to evaluating what we must do to fill the gap between 'To-Be'(what we want to be) and 'As-Is'(where we are today). We also must enhance capabilities in areas such as information gathering and product and service branding. To that end, this fiscal year I want to accelerate efforts in Corporate NV Creation to improve our core competency,

including our communication, concept creation, imagination, and marketing skills.

Furthermore, we need to change our approach to creating new businesses. Rather than just delving into areas of interest, I want to establish methods for analyzing trends and issues in global markets to identify value that our technology can provide.

I know this seems like a lot of challenges, but this does not mean I am pessimistic. I am certain we can achieve NV1000. It is something we must achieve. However, I am confident that the NGK Group is more than equipped with the technological capabilities, skills, and human resources needed to be successful.

Continuously Creating New Value

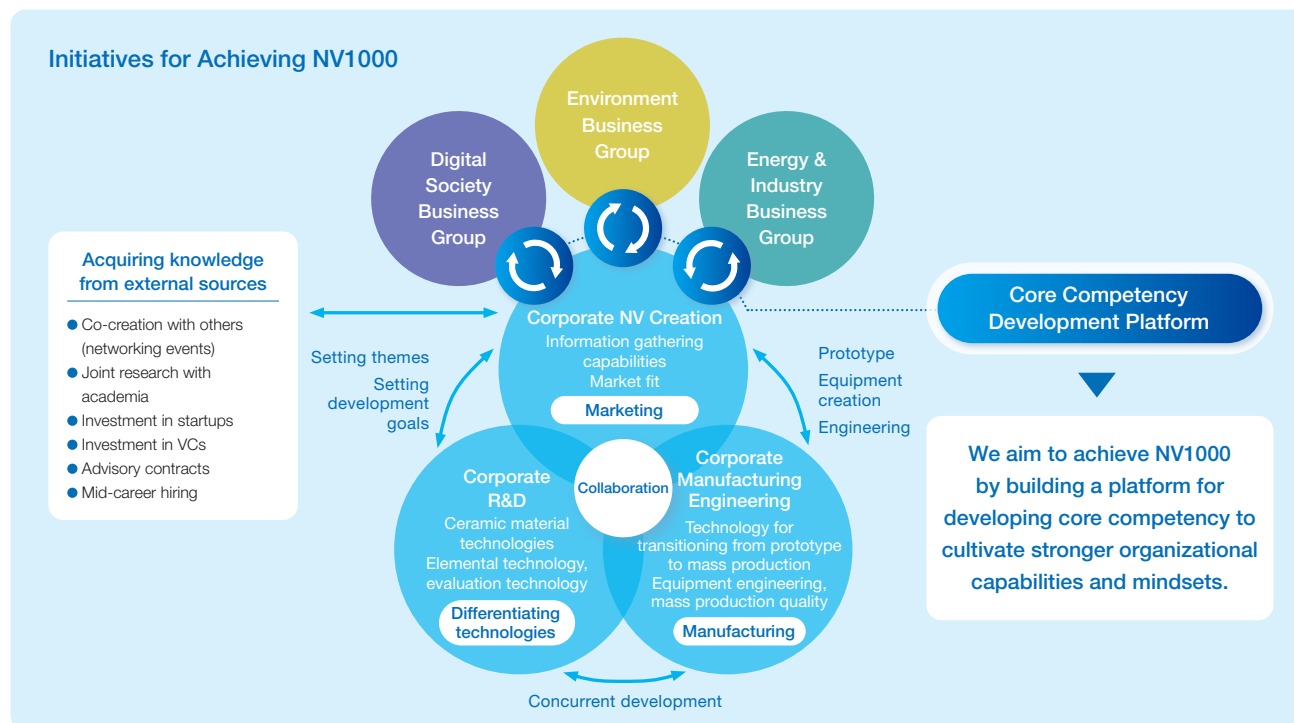
Corporate NV Creation is planning various initiatives aimed at achieving NV1000.

Traditionally, NGK has not relied on forming partnerships with other companies. However, in order to overcome limits to growth achievable by focusing solely on in-house technology development, we will proactively evaluate M&A, special-purpose companies (SPC), and joint ventures. We will carefully identify the connections between the value of the underlying technology and products, as well as the entire industrial structure, including peripheral markets, and broadly explore suitable partners and forms of cooperation. We also want to utilize corporate venturing by combining technology from startup companies with our own technologies.

In the area of intellectual property, we are also shifting our focus from the conventional patent strategy of protecting technology to business model patents. We intend to implement an aggressive patent strategy aimed at establishing a framework that positions NGK as essential to the business model.

We will also focus on improving our environment for developing human resources. This year, I want to put more effort into enhancing our core competency in areas that promote high performance regardless of the job or role, such as communication skills and critical thinking, in addition to specialized knowledge and skills. We also plan to create job descriptions and pursue employee assignments that ensure people are placed in positions that allow them to maximize their potential.

We assign employees who have achieved growth through these activities to other divisions while also accepting new personnel from other divisions. We believe that one of the important roles of the Corporate NV Creation is to function as an internal core competency training platform. We want to serve as an organization that not only creates new businesses, but also drives change in various areas and continuously creates new value.





NGK Collaboration Square DIVERS was launched in July 2025. In addition to disseminating information about NGK Group's history and strengths, DIVERS serves as a forum for the co-creation of new value with external partners. We introduce the goal of DIVERS and details on this new facility.

Generating Creative Synergy through Internal and External Collaborations

The name DIVERS embodies three ideas: Diversity, Dive (challenge), and Diver (challengers).

The word "Collaboration" in "Collaboration Square" means more than simply working with other companies. It also encompasses the meaning of serving as a space for active exchange and co-creation both inside and outside the company. The name was chosen with the goal of creating a place where creative synergy can be generated through connections between Group employees and cooperation that

transcends internal and external barriers.

To achieve NV1000, we will incorporate a variety of perspectives, knowledge and ideas (diversity), embrace a commitment to challenging ourselves in new fields to drive change (challenge), and create a place where the human resources driving NGK's third founding (challengers) can thrive.

The open space on the first floor will primarily feature exhibits and video content that introduce NGK Group's history, philosophy, and products and technologies. A unique feature of this facility is that the second floor displays both products that achieved sales growth and products that were developed but were never launched to market. In some cases, these

products were not necessarily failures, just products that were not aligned with the times. I hope that presenting such technology again may lead to renewed customer interest.

In this way, a major aim of DIVERS is to allow external parties to see our work from various angles with a high degree of transparency. Rather than asking customers if there are interested in our technology, this positions such to be approached by customers interested in the products and services we can provide them based on such technology. We believe that a new challenge for us will be to see how many opportunities we can create from this facility.

Building a Co-Creation Mindset to Further Tap into our own Technology

To serve as a base for co-creation activities with external partners, the second floor features an ID ROOM where we can exhibit our core technologies and hold technology exchange meetings and workshops. We aim to create a place where people from both inside and outside the NGK Group can meet and discuss, which will lead to new discoveries.

In these times of rapid change, we are facing the limitations of self-reliance, the style of developing technology on our own, as collaborations with other companies have become essential. More than ever before, creating value that is needed by the world and offering products and services that are chosen by customers will require a co-creation mindset to increase recognition for our technology and enables us to incorporate the strengths of other companies.

We will connect with people from various fields and create new value together. With that goal in mind, we will take full advantage of DIVERS, and I hope everyone will look forward to future developments.

What is DIVERS?



1st floor

D-Field

Group Identity that Fosters a Culture of Taking on Challenges

The first floor is a place that instills a sense of pride in employees as a member of the Group and where we steadily foster a corporate culture that encourages employees to take on challenges that look ahead to the future.

D-Field, the main space on the first floor, features fixtures made from sustainable materials sourced by NGK over the period from our founding and to the present and arranged in chronological order. We created a space that represents our Group history of growth over more than 100 years. The large screens and monitors on the walls display video content conveying the NGK Group founding spirit, history, principles and

vision. This content also introduces Group sites and presents messages from employees. This installation provides an opportunity for employees to gain a true understanding that fellow NGK members in various regions are taking on new challenges and to experience a sense of unity as a member of the NGK Group.

The D-Heritage history exhibition space introduces how each Group company was established and the challenges they faced on their path to growth. This space serves as a place where visitors can learn from not only our successes but also our failures, and acquire knowledge that will be useful for the future.

2nd floor

ID ROOM

Tapping Open Innovation to Expand our Business Portfolio

The second floor is a space for promoting co-creation through open innovation. The ID ROOM combines a variety of functions and spaces, including displays introducing the latest information on the NGK Group, video content screenings, and an exhibition space featuring NGK's ceramic technology. There is even an ice-breaking zone where people can talk over meals. The ID ROOM can be used to conduct various activities, including holding technical exchange meetings, discussions, and workshops. There is also a special exhibition room called the Tech Garage that introduces NGK's past developments and products.

We utilize video content and exhibits to build excitement for co-creation activities and to help participants gain a deeper understanding regarding NGK's technology and potential, which we hope leads to the discovery of new co-creation themes. We also want to create and develop new businesses through collaboration, which will lead to the expansion of our business portfolio.

Business Strategy by Segment

Environment Business

We provide ceramic substrates for automotive catalytic converters that purify automotive emissions, filter products for removing particulate matter (PM) (diesel particulate filters (DPF), gasoline particulate filters (GPF)), and nitric oxide (NOx) sensors for measuring NOx concentration in automotive emissions and other industrial equipment and devices that contribute to manufacturing process innovation and productivity improvements. We are also engaged in the development of next-generation products and technology for markets related to carbon neutrality, which are projected to grow globally.

Strengths

- Materials technology, product development, mass production technology, and the experience and capabilities to commercialize these technologies
- Ability to flexibly respond to the laws and regulations, regional characteristics, and demand trends of various nations, proposal capabilities for automotive companies
- Long-term relationships and networks with a broad range of industries
- Ability to propose value and solutions, including engineering

Major markets

- Automotive markets
- Domains related to industrial equipment
- Environment-related markets

Major customers

- Automobile manufacturers
- Electronics and pharmaceutical manufacturers
- Environment industry

Market environment (risks and opportunities)

Opportunities

- Global tightening of automotive emissions regulations
- Global trend towards expansion of decarbonization initiatives and the creation of environment regulations

Risks

- Shift to electric vehicles (EV)
- Expanding geopolitical risks

Digital Society Business

Manufacturing and sales of products for semiconductor manufacturing equipment that ensure stable quality in the semiconductor manufacturing process, bonded wafers driving the evolution of information and communication devices in terms of both communication quality and speed, piezoelectric micro-actuators for HDDs capable of handling increasing data volume, and beryllium copper products that contribute to improved reliability and size and weight reductions for electronic devices.

We will utilize our proprietary ceramic technologies to contribute to resolving the issues facing a continuously evolving digital society.

Strengths

- Ability to utilize proprietary material/process technologies to expand into domains that are difficult for other companies
- Development capabilities that enable us to create high-value-added products
- Ability to propose solutions that meet customer needs

Major markets

- Semiconductor markets
- Information communications, storage markets
- Automotive, industrial equipment markets

Major customers

- Semiconductors, production equipment manufacturers
- Communications device/HDD manufacturers
- Automotive parts, industrial equipment manufacturers

Market environment (risks and opportunities)

Opportunities

- Advancements in AI, increased investments in data centers
- Advancements in high-speed/large-capacity communications
- Electrification of automobiles

Risks

- Disruptive innovation
- Decoupling of global markets

Energy & Industry Business

Providing insulators and power distribution equipment that are essential for a stable power supply as well as NAS[®] batteries, which are large-capacity, long-lasting storage batteries. To realize a carbon-neutral, digital society, we will continue to respond to the evolution of the power infrastructure, the foundation of society.

Strengths

- Material technology, mass production technology, keen awareness of the market and customer needs
- Ability to respond to the laws and regulations, regional characteristics, and changes in demand of each country

Major markets

- Power-related industries

Major customers

- Power operators

Market environment (risks and opportunities)

Opportunities

- Expansion of renewable energy

Risks

- Changes in energy policies of each country

Environment Business



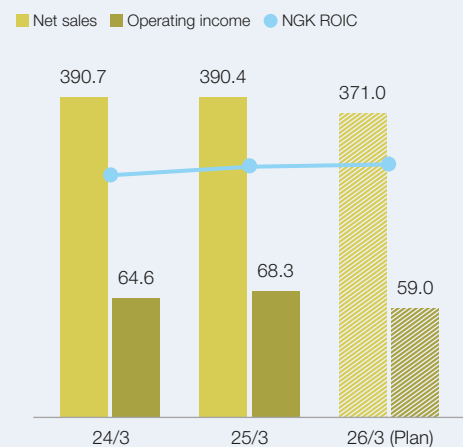
Motoo Noritake

Senior Executive Officer
Group Executive,
Environment Business Group

Net sales **390.4** billion yen **0.0%** ➡

Operating income **68.3** billion yen **5.7%** ↗

Net sales / operating income (Billions of yen) NGK ROIC (%)



- Achieve profitability required to secure capital for investments in business structure conversion to CN and DS-related businesses
- Develop new CN-related products that incorporate proprietary technologies and utilize external technologies to accelerate commercialization

Analysis and evaluation of current performance and outlook for FY2025

Net sales in FY2024 were largely unchanged year on year. Although sales of EVs were stagnant and we benefited from yen depreciation, vehicle sales were sluggish in China, Southeast Asia, and Europe. Operating income increased year on year thanks to cost reductions and the benefits of price revisions. For FY2025, we are projected decreased sales and income. While we anticipate positive factors such as a recovery in truck and off-road demand, improved selling prices, and cost reductions, performance was impacted by yen appreciation, the impact of US tariff policy, and increased input in R&D related to carbon neutrality, including products such as ceramics and separation membranes for direct air capture (DAC).

The future is highly unpredictable and there is particular concern about policies introduced by the new administration in the US. However, we will work to improve the NGK ROIC, our management KPI, by continuing to improve selling prices while also advancing initiatives related to reducing costs, labor, and lead times, and conducting DX-driven inventory management. Last fiscal year, we transferred the Industrial Process Business to generate synergy in the carbon neutrality and bio domains. This fiscal year, we will work to further expand domains.

Medium-term strategy moving forward

For the Environment Business Group, which

operates in the environment-related business domain, we will maintain earning potential centered on automotive-related businesses while advancing a business conversion to the carbon neutrality domain. There are no changes to our medium- to long-term initiatives. For existing products, we will inject high-value-added products that comply with the tightened emissions restrictions of various nations, including the Euro 7 standard adopted by the EU. At the same time, we will enhance profitability by improving selling prices and advancing automation and productivity improvement initiatives at manufacturing sites to reduce costs.

We are also beginning to see our Commercialization (New product development) seeds take form. Our business related to DAC ceramics that directly capture CO₂ in the air and sub-nano ceramic membranes capable of separating CO₂, nitrogen, and hydrogen at the molecular level has advanced to the development phase. As such, we shifted the controlling department from the Corporate NV Creation to the Environment Business Group in charge. We will accelerate initiatives towards commercialization and develop these technologies into our next generation of mainstay products. The products we develop are tied to the realization of a sustainable society. We take pride in being an enterprise that contributes to providing prosperous lifestyles for people today and several decades into the future. We will continue enhancing the profitability of existing businesses and advancing Commercialization from a medium- to long-term perspective.

Digital Society Business



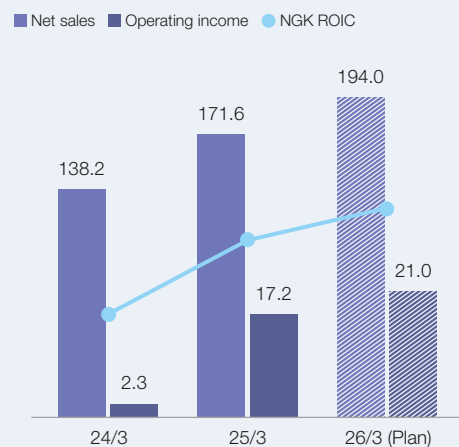
Hiroki
Fujita

Senior Executive Officer
Group Executive,
Digital Society Business Group

Net sales **171.6** billion yen **24.2%** ↗

Operating income **17.2** billion yen **747.8%** ↗

Net sales / operating income (Billions of yen) NGK ROIC (%)



- Further growth of the Digital Society Business in anticipation of expanding needs for AI and data centers
- Rapid creation of new products through collaborations between Corporate NV Creation, Corporate R&D and Corporate Manufacturing Engineering as well as through the utilization of external resources
- Review business strategies to respond to changes in our market environment and ensure the optimal allocation of internal resources (selection and concentration)

Analysis and evaluation of current performance and outlook for FY2025

In the Digital Society Business Group, which comprises digital society (DS)-related businesses, we are increasing products that contribute to the digital society in three segments: the SPE Business (products for semiconductor manufacturing equipment), the Electronic Device Business, and the New Metals Business. In FY2024, shipments of SPEs and piezoelectric micro-actuators for hard disk drives (HDDs) increased on higher demand for semiconductors used in AI applications and firm data centers investments. Additionally, yen depreciation contributed to increased sales and income.

In FY2025, we expect to see an increase in both sales and income on anticipation of a significant increase in SPE demand thanks to increasing demand for AI semiconductors. In business domains related to the digital society, the use of AI and big data is expanding steadily but the business environment remains uncertain due to geopolitical risks and risks associated with US tariffs. To ensure strong profitability amid such circumstances, the Digital Society Business will focus on developing new products while increasing the added value of existing products. At the same time, for ceramic packages and heat dissipation circuit boards, which have seen a decline in profitability due to a stagnant market, we will review business strategies to improve competitiveness and profitability.

Medium-term strategy moving forward

We conduct back casting from 2050 as part of our initiative to realize the business structure conversion outlined in the NGK Group Vision. Based on that analysis, we have identified our mission for 2030 as achieving growth on the scale of 300 billion yen in net sales, which is equivalent to current net sales from automotive-related business. As such, in anticipation of growth for the semiconductor and electronic components markets, we are planning on capital expenditures of approximately 130 billion yen over the next three years in both existing and new business domains. We are also considering the construction of new sites. Additionally, we will achieve steady business growth by offering new products that support the infrastructure of the information industry. These products include HICERAM Carrier, which are used in the chiplet integration process of high-performance semiconductors, ceramic packages for optical communications, and bonded wafers for next-generation communications. To make great strides towards the future, we will also collaborate with internal divisions as well as utilize external resources to create new products in the device domain. At the same time, the market environment for digital services changes rapidly, so we will also engage in the timely review of business strategy. To this end, we will consider re-allocating resources to strengthen competitiveness, adjusting the timing of capital expenditures, and, in some cases, withdrawing unprofitable products.

Energy & Industry Business



Hiroyuki Shinohara

Senior Executive Officer
Group Executive,
Energy & Industry Business Group

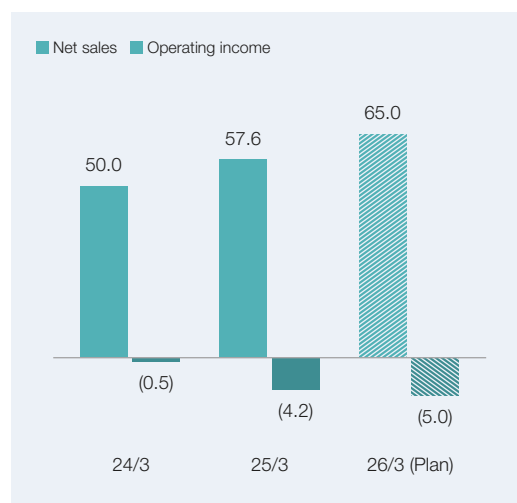
Net sales

57.6 billion yen **15.2%** ↗

Operating income

(4.2) billion yen —

Net sales / operating income (Billions of yen)



- ▶ Provide products and services that support power-related infrastructure and contribute to the realization of customer CN and other goals
- ▶ Actively transform the business structure of the two businesses and further advance optimization to secure profitability
- ▶ Advance partnership with German chemical manufacturer BASF

Analysis and evaluation of current performance and outlook for FY2025

The Energy & Industry Business Group is comprised of a two-division structure: the Insulator Business, the business on which the NGK Group was founded, and the Energy Storage Business. Operating in the electricity and energy domain, the Energy & Industry Business upholds the mission of providing value to society in the electricity and energy domain. In FY2024, Insulator Business performance was firm thanks to electricity-related investments in Japan and overseas. However, losses increased due to stagnancy in overseas projects for the Energy Storage Business. In FY2025, we project a decrease in products sales due to the end of sales of insulator products manufactured at the Chita Site as announced in 2023. Furthermore, NAS[®] batteries will be impacted by the partial stoppage of plant production processes. As a result, we forecast severe overall performance for the Energy & Industry Business. However, even amid such conditions, we will work to improve capital profitability to the extent possible. As the NGK ROIC for the Insulator Business exceeded 20%, we will further advance optimization to ensure our ability to maintain this performance level even amid changes in our operating environment. The Energy Storage Business has continued to generate losses over an elongated period and is not contributing to overall Group performance. Making improvements is an urgent matter, and we will begin by focusing on the strict selection of business activities and ensuring appropriate procurement.

Medium-term strategy moving forward

As we strive to realize the NGK Group Vision, the keyword for this Business Group is transformation. We have achieved steady profitability for the Insulator Business through ongoing restructuring efforts. Moving forward, we will engage in strategy capital expenditures and human capital investments to further ensure the sustainability of profitability. For the Energy Storage Business, while we project this difficult operating environment to continue, we also see that the ratio of renewable energy is increasing globally. This holds significant promise for long duration energy storage (LDES) and expectations of significant market scope in the future. For those reasons, we are working to strengthen our partnership with German chemical manufacturer BASF while also soliciting engagement by other companies as we explore various possibilities. At the same time, we also think that utilizing our resources towards our 2030 goal of NV1000 (aiming for 100 billion yen in new products sales) will make contributions. While the world aims for energy conversion towards realizing a carbon neutral society, there is also renewed focus on the increasing energy demands attributable to the digital society. The Energy & Industry Business Group will unite around a common understanding that our operating environment is evolving. At the same time, energy-related infrastructure has always been and will continue to be the foundation of society. We will continuously providing highly reliable products and services that contribute to society.

Intellectual Property Strategy



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



Intellectual Property Management
<https://www.ngk-insulators.com/en/sustainability/governance-property.html>



What We Aim for in 2030

- 1 Three-pronged promotion of business strategy, development strategy, and IP strategy
- 2 Implement IP activities that will lead to management and business success

What We Aim for in 2030 and the Promotion Framework to Achieve that Vision

The NGK Group positions intellectual property (IP) as an important management resource. Thus far, we have supported business through IP activities focused on securing global patent rights. Recent years have seen ever greater importance placed on investing in and utilizing intangible assets. In addition to conventional activities focused on patent prosecution, we must also invest in intellectual property that is aligned with our management strategy. Through these activities, we must create new businesses, strengthen the competitiveness of existing businesses, and achieve the NGK Group Vision. To this end, we have set forth what we aim for in 2030, clarified our intellectual property activity goals, and identified key issues related to achieving those goals. Furthermore, we are strengthening management supervisory functions by providing regular reports to the Board of Directors on the status of IP activities.

Four Key Issues Towards Achieving What We Aim for

We identified four key issues we must address to close the gap between where we are now and what we aim for in 2030. We have created a three-year roadmap for these four issues that starts in FY2024. Using this roadmap, we aim to steadily advance activities to achieve what we aim for in 2030.

Key issue	FY2024 measures addressing issue
1) Foster an IP mindset throughout the entire company	Held the NGK Intellectual Property Forum
2) Strengthen IP activities framework	Held IP activity meetings
3) Improve IP skills	Revised IP education program
4) Strengthen functions of IP Strategy Department	Actively employed external research and analytic consultants

Examples of Measures to Address Key Issues: Strengthening our IP Activity Structure

Twice a year, we hold IP Activity Meetings for existing business and important development themes. In these meetings, related personnel from multiple departments meet for interdisciplinary discussion on the IP strategies we should pursue based on analysis of the market and competitive situation, and to formulate an implementation plan. They formulate an IP activity policy linked to each business and development

IP Landscape example



Photo credit: VALUENEX Japan Inc.

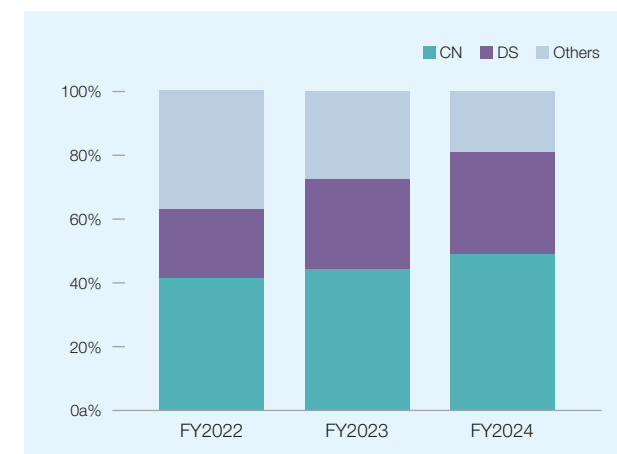
strategy, and follow up on the progress of activities every six months. For example, they use the IP landscape® to visualize technological trends and competitor patents. And they engage in decision-making concerning R&D and alliances, with an eye to obtaining technologies we lack and licensing our own patents. In FY2024, we held IP activity meetings about more than 30 technological fields.

To promote effective IP activities, we have also enhanced our awards system for recognizing excellent inventions, and we encourage the creation of intellectual property.

Accelerating R&D for Achieving NGK Group Vision

In FY2024, the ratio of NGK Group patent applications in the fields of carbon neutrality (CN) and digital society (DS) reached 80% for the first time. Going forward, we will accelerate research and development into the fields of CN and DS, and aim to achieve the NGK Group Vision.

Ratio of Patents Filed in Fields of CN and DS



Digital Transformation (DX)



The NGK Group positions Digital Transformation (DX) as the driving force of our Group efforts towards achieving the Five Transformations. We formulated the NGK Group Digital Vision to accelerate the promotion of DX for the entire NGK Group. In 2030, we are aiming to be a corporate Group for which data and digital technology utilization is second nature.



NGK Group Digital Transformation (DX)
<https://www.ngk-insulators.com/en/info/d-vision/>



NGK Group Digital Vision

What we want to be

Apply digital technologies as a key driving factor of Five Transformations to realize the Third Foundation and lead to carbon neutrality and digital society.

Transform NGK Group into a digital-oriented company by 2030

What we must do

Human Resources

- DX enlightenment from top management to employees
- Development of highly skilled data scientists 1,000 employees in 2030
- Training of IT liaisons*1 in each division

Digital Technology

- Construct data utilization platform
- Develop next-generation technologies MI*2, PI*3, CPS*4
- Robust IT security

Organizational Culture

- Top management commitment
- Cooperate and promote with all NGK Group
- Reform all NGK employees' mind Agile, Challenge

*1 IT liaisons: Human resources that can adopt measures that strike a balance between management, operations and IT

*2 Materials informatics (MI): Applying informatics (information science) such as machine learning and big data, the core technology of AI, towards new materials and new component development

*3 Process informatics (PI): Applying information sciences to new process development

*4 Cyber-physical system (CPS): Creating value by using real-world data to recreate virtual spaces for analysis, and then provide feedback for real-world applications

Progress on What We Must Do to Realize the NGK Group Digital Vision

	2030 Targets	Results
Human resources	Develop 1,000 employees	Developed 1,181 employees, achieved target ahead of schedule
Digital Technology: Construct data utilization platform	Construct data utilization platform in each business division	Completed construction of infrastructure for data utilization. Started utilization in 20 projects, mainly in manufacturing
Digital Technology: Materials Informatics	Reduce material development lead time for all products to 1/10 of FY2020 level	Currently implementing capital expenditures for a high-speed testing system that will generate experimental data five times faster than conventional systems. Gradually beginning utilization
Digital Technology: Cyber-physical Systems (CPS)	Build a virtual production line and utilize simulations	Conducted production line process simulations in a virtual space (2 cases). Used results to confirm equipment layout and material flow, and to consider efficiency when making investments to increase production
Organizational Culture: Establishment of DX Promotion Sections	Establish DX promotion teams in all business divisions	Launched a project to promote business transformation for head office divisions. Selected DX promotion managers from each division to advance the project

Progress and issues related to establishing a promotion framework and accumulating results

In FY2024, we achieved the target of developing 1,000 personnel for digital transformation by FY2030, one of the targets outlined in the NGK Group Digital Vision, ahead of schedule. We also advanced efforts to establish internal systems for realizing the establishment of a promotion framework and the accumulation of results by creating a DX promotion framework comprised of three departments: the Digital Transformation & Innovation Department, the Manufacturing System Division, and the ICT Department, and providing bi-monthly reports on DX promotion to the officer in charge. To advance data-driven decision-making, we actively worked on three areas: optimizing operations at the head office and back-office departments, making business divisions more autonomous, and utilizing data to create new value. In particular, in the area of utilizing data to create new value, we successfully used an in-house AI system to conduct validation experiments for identifying and exploring new business ideas. In the future, we will take on the challenge of creating new businesses by matching market needs with our in-house assets.

On the other hand, one issue is expanding the data utilization platform enabling the centralized management of dispersed data to domains other than manufacturing. In the future, we will expand the platform to the head office, indirect departments, and group companies, including overseas, to optimize workflow, speed up decision-making, and increase productivity.

Future plans

From 2026, we will shift to the full-scale implementation of DX activities with the goal of improving profitability at the business unit level and transforming business models on a Group-wide level. The NGK Group will unite to work non-stop towards creating new value as we aim for the day when the use of data and digital technology becomes commonplace.

Human Capital Management

Creating a Corporate Culture that Fosters Personal Development and Organizational Growth



To advance the Five Transformations aimed at realizing the NGK Group Vision, in April 2025 we adopted a new Key Personnel System. We will accelerate the development of human resources that enables all NGK Group employees to think and act autonomously and lead the way towards transformation.

Masato Nozaki

Executive Officer
General Manager,
Human Resources Dept.

Approach to our Human Resource Strategy

We position human resource strategy as an important pillar in strengthening our corporate competitiveness, and are working towards organizational development that will advance our business strategy. To successfully convert our business structure as we pursue our third founding as envisioned in the NGK Group Vision, it is essential that we balance our R&D and commercialization (new product development) with improving the profitability of our existing businesses. This will enable us to increase our earning potential. With this in mind, we will implement various human resource policies to foster a diverse and energetic work environment and develop an organization and human resources capable of continuously undertaking new challenges. We will create an open and transparent workplace that encourages all employees to reach for new heights. We will support such efforts through a corporate culture that respects diversity and does not fear challenges. We believe that fostering such a culture will lead to sustainable improvements in enterprise value. Above all, we want NGK Group to be a company where all employees can envision and formulate their own portfolio for happiness* that consists of elements, such as a sense of accomplishment, growth, good

colleagues, financial stability, and health, that can be obtained by being a part of the NGK Group.

* Portfolio for happiness: Elements that make up one's happiness, such as a sense of accomplishment, growth, good colleagues, financial stability, and health.

Human Resource Issues Related to Enterprise Value Improvements

With business transformation, it is important to add new perspectives such as co-creation and collaboration, challenge, vitality, and diversity while maintaining our existing corporate culture that highly values social contributions, resilience, and stability. Essential to achieving this is driving change in how our employees act. We have designed and started to operate a new key personnel system to foster a mindset of taking on challenges and create an environment that encourages autonomous career development. We encourage employees to take on challenges by basing evaluations not only on short-term results but also on the behavior expected of key personnel. We are also developing a human resources skills map that will serve as a visual reference for the skills and experience required to realize our management strategy. This will increase the accuracy of our personnel recruitment and

Enterprise Value Improvement Flow Chart

Human Resource Issues Related to Enterprise Value Improvements

- Promote HR strategy linked to business strategy
- Create a workplace where diversity and collaboration generate synergy
- Framework for encouraging employees to act proactively and autonomously
- Promote understanding of HR policy goals

Core Measures for Improving Enterprising Value

- Formulate a talent portfolio
- Create a skills map to strengthen talent management
- Assign HRBP
- Develop management personnel to maximize team performance
- Expand open recruitment system, adopt scout system

Converting our Business Structure

Improving Enterprising Value

Human Capital Management

placements towards achieving our medium- to long-term plans, which include conducting strategic recruitment, placement, and training. We also plan to apply this tool in management succession planning as we apply a global perspective towards the next generation of management personnel.

We also conducted employee engagement surveys and pulse surveys, and repeatedly engaged in dialogue with department heads to devise and implement personnel policies that address employee needs while remaining aligned with our management and human resources strategies. Through such communication, we realized that the message from the CEO and the intentions behind personnel policies were not being sufficiently conveyed to employees. This prompted efforts to gain employee understanding and acceptance of the new system as quickly as possible.

In response to those findings, in FY2024, we assigned Human Resources Business Partners (HRBPs) to Corporate NV Creation to act as a bridge between the business divisions and the Human Resources Dept. From this fiscal year, we are extending this initiative to the entire Group. HRBPs are beginning to take on the role of assisting management in each business division. The first step to HRBPs fulfilling their roles is to gain the trust and acceptance of employees. We want employees to understand the benefits provided by HRBPs, who plan and implement strategic HR policies from a business perspective. These efforts have enabled us to take a step towards HR transformation as we look ahead to 2050. At the same time, we do not believe that simply changing our systems is enough to drive transformation. To realize our vision, we will continue working towards the widespread adoption of these systems and promote the benefits efforts.

Adoption of a New Key Personnel System

Aiming to increase opportunities for diverse personnel and encourage autonomous action, NGK revised its human resources system for key positions in April 2025, the first time in nearly 20 years. The concepts of the new system are improving transparency, fairness, and acceptability, promoting autonomous action, and supporting challenges.

Under this new system, we expand the previous single grade to three grades: Expert, personnel with a high level of expertise who take on a central role in business promotion;

Senior Professional, personnel who fulfill a central role by demonstrating expertise or through group leadership; and Manager, personnel responsible for running the organization and achieving results as an executive. This system provides a diverse range of work opportunities based on the individual's expertise and aspirations. We also define and publish job descriptions for all positions with a clear description of the position, necessary knowledge and skills, and expectations. We have set annual salaries based on each position and abolished seniority-based systems and the mandatory retirement age of 58 for positions. As a result, we are seeing more senior personnel taking on new roles, including personnel being appointed as group managers at age 60 or returning to general manager positions. This new system has created an environment in which employees of all ages can take on new challenges and has evolved into a system that allows employees to make the most of their knowledge and experience. Motivated personnel are able to work

enthusiastically, which is helping stimulate NGK as an organization.

We revamped our evaluation system, introducing evaluations not only for short-term results but also for six behaviors based on the NGK Group Human Capital Management Policy. This system encourages the behavior that is essential to realizing our vision, such as challenging ourselves to transformation and utilizing diversity. In addition to expanding our internal recruitment system, we also established a new scouting system. We are increasing opportunities for employees to proactively take on new career challenges, and have created an environment that stimulates our organization and encourages employees to take on new challenges.

Through these system reforms, we will accelerate the development of human resources capable of thinking and acting autonomously and driving transformation as we promote the Five Transformations needed to realize our Group Vision.

Overview of New Key Personnel System

Previous System and Its Issues

- All key personnel were expected to take on the role of manager, making it difficult to tap into diverse strengths and careers
- Treatment was determined based on past contributions, making it difficult to encourage challenges and transformation
- Because job requirements were unclear, there was no momentum leading to people taking on challenges
- Although a retirement age of 65 had been adopted, the abilities of veteran employees were not being fully utilized

Establishment of Multiple Grades

- Three grades be established to enable diverse talent to tap into their strengths
- Grades and compensation be determined based on roles and duties performed, not past contributions or age

Creation of Job Descriptions (JD)

- Clearly outlines required knowledge and skills and defines roles for each position
- Abolishes seniority-based systems and mandatory retirement ages for positions

JD Sharing, Internal Job Postings, and Scouting

- The JD and grade for all positions are posted
- The internal job posting system is expanded to all key personnel positions, and a new scouting system was established

Evaluation System

- In addition to performance evaluations, expected behavior is also evaluated
- Each year's evaluation results are reflected in the following year's annual salary

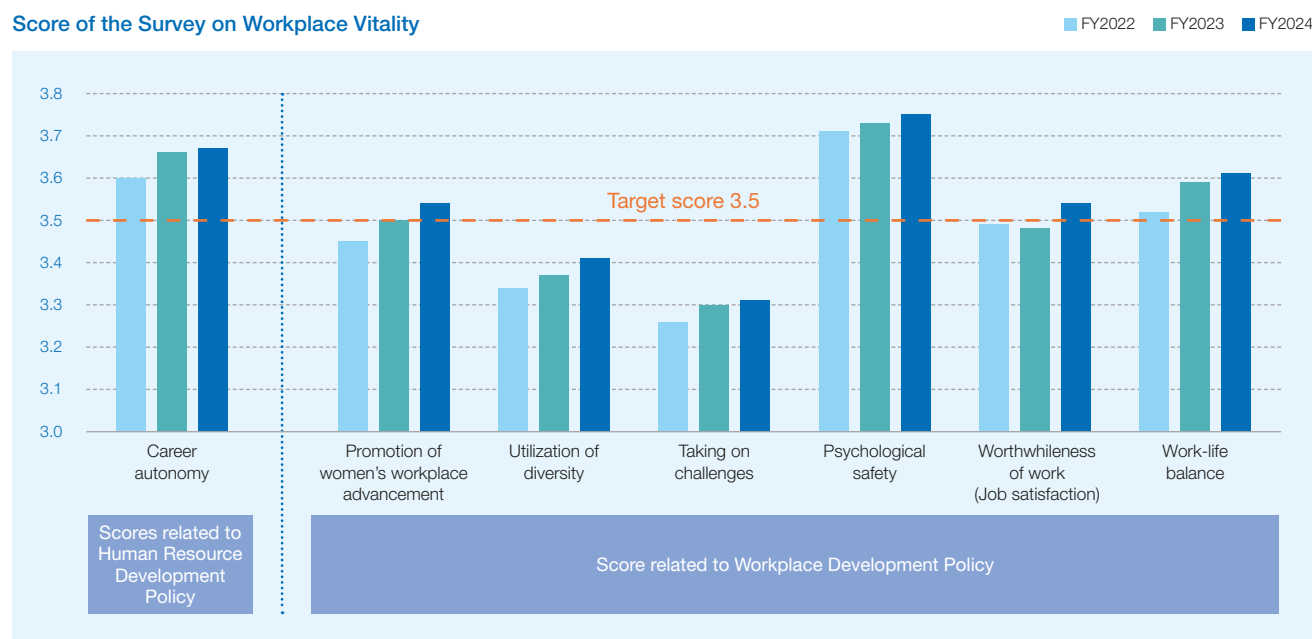
Employee Engagement

The employee engagement survey we conduct every year plays an important role in our evaluation of personnel policies. This year, scores improved from the previous year across all categories. In particular, we achieved our target score for job satisfaction for the first time. We believe that this can be attributed to proactive efforts made Group-wide, including holding workshops to stimulate the workplace. However, we did not achieve targets in areas such as taking on challenges and diversity, and we view this as an important issue. In the taking on challenges category, the score for human resource systems that support challenges was low. We will work to ensure that the new Key Personnel System established this fiscal year and future personnel policies and systems support employees taking on challenges.

Looking Ahead

We believe in the ability of both our employees and organization to achieve growth. Based on this belief, we are working to create an environment in which all employees can take on challenges, learn, and experience growth through initiatives such as revising our Key Personnel System, developing skill maps, formulating talent portfolios, and improving management skills. We believe that these experiences provide the joy and sense of accomplishment that come from working. We also believe these lead to happiness and engagement. Increasing the number of highly engaged colleagues will increase the creativity and productivity of the NGK Group, and help us evolve into a more sustainable and attractive organization. This growth will then be returned to each employee in the form of greater happiness. We will continue to aggressively promote initiatives aimed at maximizing the potential of our employees and our organization as we strive to realize a future in which our people and organization grow together and create a circle of happiness and growth.

Score of the Survey on Workplace Vitality



Global Engagement Activities

Executive Officer
President,
FM INDUSTRIES, INC.

David Miller



FM Industries (FMI) established a Mission Statement and Values to drive excellence across our operations. Our Mission - to "Provide outstanding manufacturing solutions and services that exceed customer expectations" - reflects our commitment to continuous improvement. Our five core Values - Customer Focus, Safety, Integrity, Quality, and Accountability - define our culture and guide our success. Senior management collaborated on identifying the FMI Values during the annual FM Industries Strategy Day, ensuring alignment with FMI's vision. To reinforce the Values, all Team Members across the company completed introductory Values Training, fostering a shared understanding of their role in a positive work environment. To celebrate employees who embody these principles, FMI launched the "Values Champion" initiative, allowing managers to nominate staff for an award. Honorees recognized as going "above and beyond" in their everyday work with FM receive vouchers to purchase exclusive FMI Values Champion apparel, recognizing their dedication and contributions. Further training is scheduled for the second half of 2025. Line managers will lead these FM Team Member sessions which will focus on applying the Values in daily work. FMI's Mission Statement and Values were thoughtfully designed to complement the strategic NGK 2050 Group Vision. Our Mission and Values strengthen the NGK enterprise and ensure long-term growth and sustainability for our organization.

Respecting Human Rights

To ensure respect for human rights throughout NGK Group business activities, our relationships with employees are governed by the NGK Group Corporate Business Principles and Code of Conduct, while our relationships with suppliers are governed by the NGK Group Supplier Code of Conduct. In April 2021 we established the NGK Group Human Rights Policy as a separate policy on human rights. This Policy serves to clarify our internal and external messaging while accelerating our efforts towards respecting human rights.



Human Rights Due Diligence | Identifying Notable Human Rights Issues

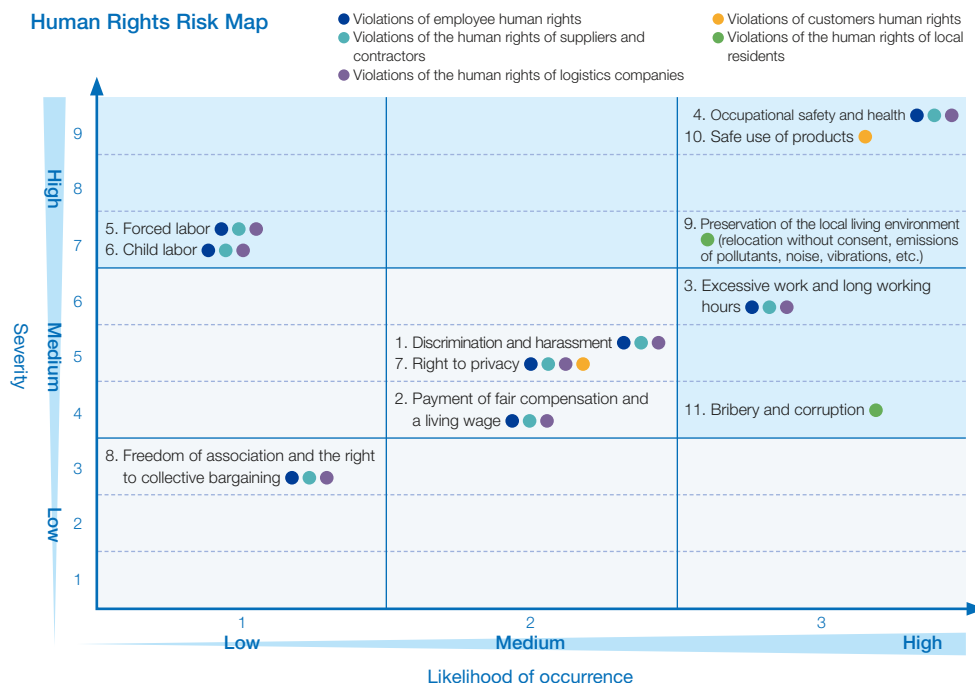
We created a long list based on the basic human rights identified in the UN Guiding Principles as being the responsibility of companies. We then organized our value chain to identify human rights issues related to our business. We investigated human rights incidents that manifested in our industry, and conducted a country risk survey to understand potential risks in the countries in which we operate. Next, in line with the approach set out in the OECD Due Diligence Guidance for Responsible Business Conduct (RBC), we assessed the importance of each issue from two perspectives: severity and likelihood of occurrence. Through interviews with the heads of each business division, we plotted human rights issues on a risk map for each stakeholder. After consulting with relevant parties and reporting to the HR Committee, we identified human rights issues that should be addressed as a priority. The NGK Group is addressing these issues as a priority

and is working to prevent and correct any human rights issues. We will also continue to review the human rights risk map, taking into account changes in our business environment as well as the opinions of stakeholders.

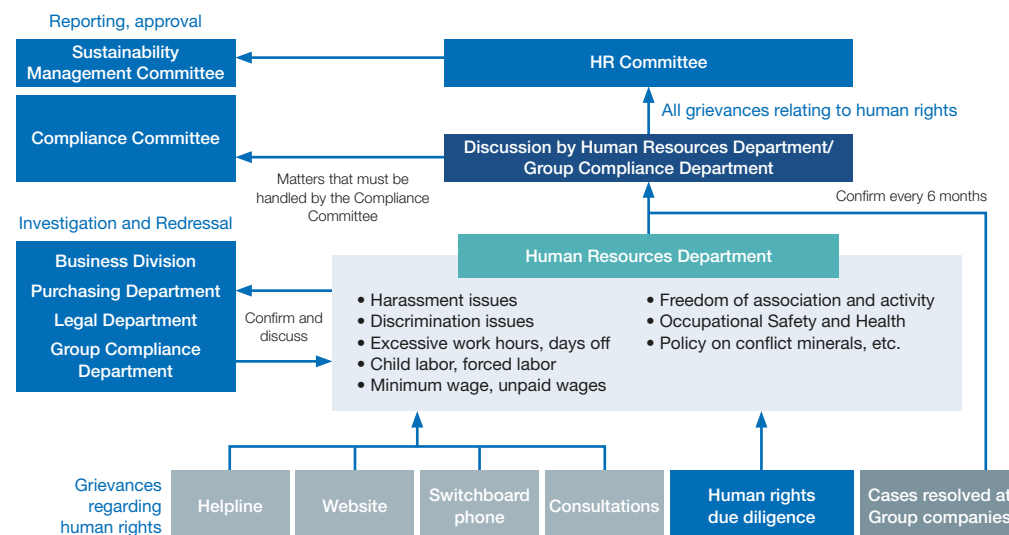
Grievance Mechanisms

NGK and our Group companies in Japan have established whistleblowing desk (helpline) available to all officers and employees. Furthermore, Group companies outside Japan have established consultation and reporting mechanisms that are aligned with the customs of each country. We also established a Supplier Helpline for suppliers to seek advice or submit reports. All other stakeholders are able to seek advice or report through our corporate website. If a human rights impact is confirmed in the content of a consultation or report, the Human Resources Management Department will consult with the relevant department, provide relief to the person involved, and take corrective and preventive measures.

Human Rights Risk Map



System for Responding to Grievances and Correction/Redressal



Environmental Initiatives

Basic Approach

The NGK Group recognizes the protection of the global and space environment as a critical issue shared by all humanity and is committed to promoting business activities in harmony with nature. To express our philosophy and aspirations regarding the environment, we have formulated the NGK Group Environmental Vision and established the NGK Group Environmental Policy as practical guidelines for realizing that vision. Together, the Vision and Policy serve as complementary pillars that underpin the NGK Group's environmental management.

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.

Promoting initiatives based on the NGK Group Environmental Policy

In accordance with the NGK Group Environmental Policy, the NGK Group strives to develop products with a low environmental impact and that contribute to the environment. We work to reduce the environmental load of our business activities through energy conservation, the use of renewable energy, resource reduction and recycling, and the appropriate management of water resources and chemical substances. We also collaborate with business partners to promote environmentally friendly procurement and contribute to biodiversity conservation. At the same time, we are strengthening our environmental management framework from a global perspective to promote environmental conservation.



NGK Group Environmental Vision / Environmental Policy
<https://www.ngk-insulators.com/en/sustainability/environment-vision.html>



5-Year Environmental Action Plan
<https://www.ngk-insulators.com/en/sustainability/environment-plan.html>



CO₂ emissions (Sustainability Data Section)
<https://www.ngk-insulators.com/en/sustainability/data.html>



5-Year Environmental Action Plan

Our 5-Year Environmental Action Plan positions the main themes of our Environmental Vision, carbon neutrality, a recycling-oriented society, and harmony with nature, as core issues towards realizing the NGK Group Environmental Vision. We engage in environmental activities by setting annual goals each year that are aimed at achieving the 5-year Plan.

5th 5-Year Environmental Action Plan FY2024 Results

Category	Item	KPI	FY2024		
			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)	540,000 metric tons (Reduced by 26% from FY2013)	○
		Rate of renewable energy usage (consolidated) ^{*2}	25%	26%	○
	Reduce CO ₂ emissions across value chain	Plan progress	Scope3: SBT certification Expand LCA to divisions	Scope3: SBT certification Expanded LCA (developed products)	○
 Initiatives for a recycling-oriented society	Reduce waste produced during production activities ^{*3}	Waste ^{*3} : Waste generated per unit of sales (consolidated)	Reduce by 50% from FY2013	Reduced by 62% from FY2013	○
		Reduction rate against BAU ^{*4} for volume of waste ^{*3} (consolidated)	Reduce by 30% from FY2013	Reduced by 35% from FY2013	○
	Promote resource recycling	Recycling rate (Japan)	Maintain at least 99%	99.6%	○
	Manage and respond to water resource risks	Water withdrawal per unit of sales (consolidated)	Maintain FY2019 level	Maintain FY2019 level	○
 Initiatives toward harmony with nature	Promote biodiversity conservation	Plan progress	TNFD disclosure	Completed TNFD disclosure	○
 Contributions to environmental society	Develop and distribute products / services contributing to environmental protection	Number of registered products	Increase registered products	One additional (Upgraded NAS [®] battery NAS [®] MODEL L24)	○
	Promote CSR procurement	Plan progress	Review SAQ ^{*5} based on the Supplier Code of Conduct	Reviewed SAQ	○
 Promotion of environmental communication	Contribute to local communities	Plan progress	Collaboration with EPOC	EPOC seminar planning	○
	Increase environmental awareness	Plan progress	Training about resource recycling and harmony with nature	Used internal presentations to promote awareness	○

^{*1} Self-evaluation standards for achievement level of fiscal year target: ○ : Target achieved; × : Target not achieved

^{*2} Ratio of electricity from renewable energy to total electricity consumption

^{*3} Substances, including valuable substances, other than products that are discharged from business sites

^{*4} Reduction rate compared to business as usual (the amount of waste generated if no improvements were made)

^{*5} Self-Assessment Questionnaire concerning corporate social responsibility

TCFD

Climate change is a serious global risk and a critical management issue that has a significant impact on NGK Group business activities. To address this issue head-on and contribute to resolutions, the NGK Group implements various measures related to climate change based on TCFD recommendations. We also have formulated a transition plan and proactively provide information disclosure.



Information Disclosure Based on TCFD Recommendations
<https://www.ngk-insulators.com/en/sustainability/environment-tcfd.html>



Information Disclosure Based on TCFD Recommendations

The NGK Group conducts analysis based on TCFD recommendations to ascertain the risks and opportunities climate change presents on our business. We then provide information disclosure from four perspectives: governance, strategy, risk management, and metrics and targets. The Board of Directors is responsible for monitoring climate change-related issues and cooperates with the Sustainability Management Committee to advance response measures. Using scenario analysis that incorporates both short- and long-term perspectives, we are formulating strategy for various themes, including the adoption of renewable energy and reducing the energy consumption of our products.

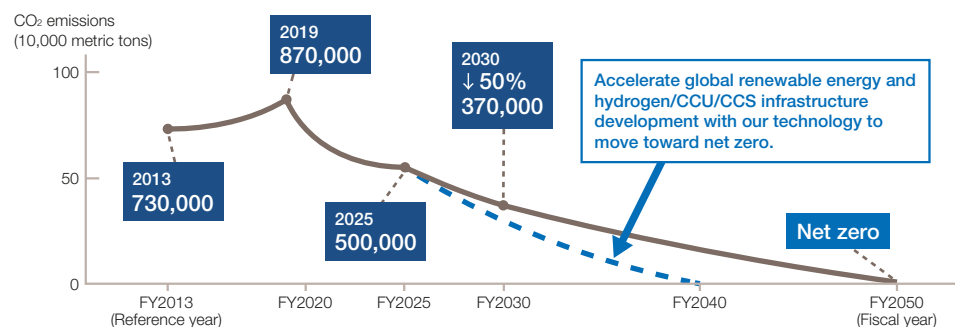
We also set targets for reducing GHG emissions and monitor our progress. We will continue to position climate change response as a critical management issue as we strive to contribute to the realization of a sustainable society.

	Major Initiatives
Governance	The Board of Directors monitors climate-related risks and opportunities while the Sustainability Management Committee evaluates response policy and, through deliberations with the Executive Committee, incorporates these results into strategy.
Strategy	We conduct scenario analysis aimed at realizing a carbon neutral society to identify opportunities such as expanding our selection of products related to decarbonization. Through the conversion of our business structure and technological innovation, we aim to minimize risks related to climate change and achieve long-term improvements to our corporate value.
Risk management	We use a Group-wide risk management framework to regularly assess and monitor climate change-related risks as important risks. We work to mitigate risks by analyzing the impact on our business activities and supply chain, implementing countermeasures, and reviewing the results of these efforts.
Metrics and targets	Using GHG emissions (Scope1, 2, and 3) as primary metrics, we have set a target of reducing Scope 1 and 2 emissions by 50% by 2030 (compared to fiscal 2013 levels) and achieving carbon neutrality by 2050. We also promote energy conservation activities and the adoption of renewable energy, and continuously manage and disclose our progress towards target achievement.

Roadmap to Carbon Neutrality

To achieve the NGK Group Environmental Vision, we have formulated a Strategic Roadmap to Carbon Neutrality, which is comprised of four strategies. Setting the Group-wide target for 2050 as achieving net zero CO₂ emissions, we also set emissions targets as milestones for FY2025 (500,000 tons, a 32% reduction compared to FY2013 (reference year)) and FY2030 (370,000 tons, a 50% reduction compared to FY2013). By advancing the development of technologies related to hydrogen, CCU, and CCS (CO₂ collection, use, and storage), we will also consider the accelerated achievement of net zero.

Carbon Neutrality Strategic Roadmap



Four Strategies

Strategy 1	Development and provision of carbon neutrality (CN)-related products/services	In addition to our existing carbon neutrality (CN)-related products, we will also work to commercialize new products under development as well as offer society NAS [®] battery-driven renewable energy supply business and other relevant services.
Strategy 2	Top-down enhancement of energy-saving	We will work to further enhance our existing energy conservation activities, as well as introduce high efficiency equipment and facilities and more energy-efficient operations.
Strategy 3	Promotion of technical innovation	Although the ceramics firing process requires fossil fuel which is responsible for CO ₂ emissions, we will work to switch over to hydrogen, ammonia and other fuels that will allow us to become fossil fuel-free.
Strategy 4	Expanded use of renewable energy	We will promote supply and demand management by procuring renewable energy and installing photovoltaic (PV) power generation equipment and NAS [®] batteries at our own sites, with our future goal of using renewable energy to cover all electricity used by our Group.

Environmental Initiatives

TNFD

In line with international trends, the NGK Group focuses on our relationship with nature and recognizes the importance of ascertaining our dependence and impact on nature throughout our entire supply chain. Positioning biodiversity conservation and rehabilitation as important issues, we will promote initiatives aimed at the realization of a sustainable society.



Information Disclosure Based on TNFD
Recommendations
<https://www.ngk-insulators.com/en/sustainability/environment-tnfd.html>



Information Disclosure Based on TNFD Recommendations

As our response to TNFD disclosures, the NGK Group conducts trend surveys both in Japan and overseas. In addition to assessing risks and opportunities based on the LEAP Approach (Locate, Evaluate, Assess, Prepare) outlined in TNFD recommendations, we also conduct dependence and impact evaluations for our entire supply chain, and disclose those results. In FY2023, we identified contact points with nature for NGK Group businesses and production sites. In FY2024, we assessed dependence and impact for our manufacturing phases.

Assessing Positive Impact of Products and Services

Referencing the risk categories outlined in the TNFD recommendations, we confirm specific currently anticipated risks and opportunities related to the main areas of dependence and impact on nature for our entire Group. We believe that NGK Group business activities can have a positive impact on nature, and not just a negative one. Referencing the factors that trigger changes in nature as outlined in the TNFD recommendations, we assessed the positive impact major NGK Group products and services have on nature. Ceramic products are generally characterized by high heat resistance,

corrosion resistance, and durability, which contribute to their long service life. Compared to other materials, they help reduce the consumption of raw materials and the generation of waste. Taking advantage of these characteristics, we expect that our Group's major products and services can contribute to mitigating our negative impact on nature.

For example, our ceramics for purifying automobile exhaust feature an ultra-thin wall structure that provides high performance. Compared to conventional products, our products are able to purify harmful substances contained in automobile exhaust gases more effectively.

Future Initiatives

We plan to conduct a detailed assessment of our dependence and impact on nature along the upstream of our value chain, including the extraction and mining of raw materials. We also plan to examine nature-related risks and opportunities using scenario analysis. For measurement metrics and targets, we will continue referring to global core disclosure metrics outlined in the TNFD recommendations while also expanding our evaluation of data collection and targets. At the same time, we will enhance our disclosure content as we aim to achieve disclosure for all items based on the TNFD recommendations.

Positive Impact of Products and Services

Business Details		Major Products and Services	Land use changes	Climate change	Resource use	Contamination			
			Terrestrial ecosystem use	Greenhouse gas emissions	Extraction of inorganic resources	Solid waste	Air pollution other than greenhouse gases	Soil pollution	Water pollution
Environment Business segment	Automotive Ceramics Business	Ceramics for exhaust gas purification	●		●	●	●	●	●
		NOx sensors	●		●	●	●	●	●
	Industrial Process Business	Industrial heating systems, Refractory products	●	●	●	●			
		Membrane separating systems		●		●			●
		High-temperature dust collector	●		●	●	●		
		Low-level radioactive waste treatment units		●		●	●		
Digital Society Business segment	SPE Business	Ceramics for semiconductor manufacturing equipment				●			
	Electronic Devices Business	EnerCera® battery		●	●	●			
	Power Electronics Ceramics Business	AMB substrates		●		●			
	Special Metals and Mold Business	Special metals and mold products		●	●	●			
Energy & Industry Business segment	Energy Storage Business	NAS® batteries	●	●	●	●			
	Insulator Business	Insulators	●	●	●	●			

Message from the Chair of the Board of Directors



Maximize stakeholder interests while pursuing long-term, sustainable improvements in enterprise value through Board leadership that promotes high-quality deliberations and speedy and optimal decision-making.

Taku Oshima | Chair

The Board of Directors is the highest decision-making body of a company. The Board reports, deliberates, and votes on important matters related to company management and business execution. The Board is also a forum for discussing how to achieve sustainable growth and maximize both our enterprise value and the interests of related stakeholders over the medium- to long-term. With this in mind, in FY2024, we set aside significant time to engage in Board deliberations centered on various themes related to the NGK Group's medium- to long-term growth strategy. In particular, we exchange opinions from various perspectives on how to enhance the Group's earning potential as well as on measures to address unprofitable businesses. We will continue to deliberate on these issues, which I consider to be the key to realizing the NGK Group Vision, and link those results to creating an even better future for the NGK Group. I also want FY2025 to be a year in which we delve deeper into discussions on the strategies and initiatives we will implement over the next five years, our final push towards achieving NV1000 by our target year of FY2030.

Steering business is no easy task in a rapidly changing and increasingly unpredictable business environment. In such times, outside perspectives that are not bound by internal conflicts of interest can be a reliable source of support. In that sense, the addition of three new outside directors with different areas of expertise to the Board of Directors from FY2024 has provided an opportunity to increase the objectivity of the Board of Directors. The opinions expressed by each individual, backed by their own extensive knowledge and experience, have provided positive stimulation to company executives and deliberations are livelier than ever. My hope is that Outside Directors will serve not only in a supervisory role, but also offer honest recommendations and advice to management. Outside Directors help us notice matters that internal employees may not recognize and sometimes give advice that may be hard to hear. I believe that such a presence will strongly support the NGK Group's transformation and contribute to sustainable improvements of our enterprise value.

The effectiveness of the Board of Directors is evaluated and verified once a year by an external organization. While the Board has received high marks for most evaluation items in previous years, there have also been some recommendations made. In response, we are promptly implementing measures to further improve effectiveness.

Based on the above, I believe that our Board of Directors is functioning appropriately and effectively. However, this is not the end of reforms for the Board of Directors. As a future initiative, we are currently formulating a plan for the visualization of Board activities in an easily comprehensible manner for both internal and external parties to further increase transparency.

As Board Chair, I am responsible for ensuring the effectiveness of the Board of Directors, which serves to support corporate governance. Based on the belief that enabling free, open and constructive deliberations is essential to improving the effectiveness of the Board of Directors, I will strive to promote high-quality discussions and further strengthen governance while also ensuring fairness and independence.

Roundtable Discussion with Our Outside Directors

DISCUSSION

Expand discussions on what the NGK Group wants to be and support the realization of new growth and improvements in enterprise value.

Outside Director
Hiroshi Sakuma

Outside Director
Emiko Hamada

Outside Director
Noriko Kawakami

Outside Director
Kengo Miyamoto



What is necessary to achieve the transformation that will lead to the realization of the NGK Group Vision? How should the Group change? Four Outside Directors with diverse backgrounds and expertise spoke openly on these issues.

Looking back on FY2024

Hamada I view FY2024 as a year in which the NGK Group stayed on course towards the NGK Group Vision while diligently engaging in initiatives to pursue transformation through new products, the reorganization of development sites, and reforms to its human resource structure. The Board of Directors allocated even more time towards discussions related to business, enabling an unparalleled level of depth of deliberations regarding new businesses and acquisitions as forward-looking investments, as well as concerning businesses with struggling performance. In the background of these enhanced Board meetings was the increase in the number of Outside Directors, as three new Outside Directors were added as Board members last fiscal year. All three Outside Directors have vast knowledge and experience in their respective fields, which has enabled discussions from new perspectives and led to more in-depth questions in response to explanations from management. I can sense that this addition has led to positive change on multiple levels.

Sakuma I proactively provided advice related to globalization, geopolitical risks, the M&A process, energy management, and finance-related matters based on my experience in managing global companies. I believe the advice I provided based on my many years of experience in M&A was particularly useful.

Miyamoto I was able to begin my work as Outside Director very smoothly thanks to the various support I received towards obtaining information in advance, including factory tours and meetings with Executive Officers. As a lawyer, I am particularly focused on management supervision. At the preliminary briefings held prior to Board meetings, we were provided very open and

detailed explanations concerning company business plans and other matters. What surprised me was that they also arranged a special session to talk about past scandals, and that they spoke very openly about them. I could sense their determination towards preventing future scandals, and I was highly impressed by their willingness to learn from the past.

Kawakami As an engineer who has devoted myself to product development, this is my first experience being involved in management as an Outside Director, so the past year was quite new to me. The three of us were newly appointed and all are serving as an Outside Director for the first time, so we had no preconceived notions about the expectations of an Outside Director. I believe we have been able to reflect our diverse perspectives and respective backgrounds in discussions freely and openly. My impression from my daily activities is that the thought processes of management and product development engineers have more in common than I expected: analyzing market conditions, identifying issues, deciding on which challenges to take on and evaluating a response. If something goes wrong or something unexpected occurs, analyze the issue, verify it further, and then implement new measures. I feel that my many years of experience as a product development engineer have been useful in fulfilling the role expected of an Outside Director: providing

advice and evaluating and supervising management.

Miyamoto What left an impression on me were deliberations concerning the acquisition of Deutsche KNM GmbH (DKNM), which was conducted with the aim of expanding the company's sub-nano ceramic membrane business, and investments in carbon neutral-related businesses such as direct air capture (DAC) ceramics, products that directly adsorb and capture CO₂ from the atmosphere. With the shift to electric vehicle (EVs) causing a decline in NGK's mainstay Automotive Ceramics Business, there was a shared awareness concerning the need to identify an alternative business. A decision was reached after discussing the issue from a variety of perspectives while also taking into account the risks and rewards. I intend to continue to monitor the situation closely going forward.

Sakuma I was quite harsh in my opinions concerning unprofitable businesses. The single largest prerequisite in business is to make a profit. Therefore, if you're not making money, you should seriously consider withdrawing from the business. While strengthening long-term competitiveness is important, NGK must also pursue immediate profits. I believe that, as an Outside Director who is independent from the company, it is my role to offer frank advice on such difficult issues, and I hope to contribute to making appropriate management decisions.

Policies for improving PBR

Sakuma NGK's price/book value ratio (PBR) has been below 1x for a long time. In a sense, PBR is an indicator for measuring how attractive a company is to the capital market. The NGK Group possesses unparalleled ceramic technologies and is evaluated as a solid company that generates high profits from ceramics for purifying automobile exhaust. However, the trend toward EVs has raised doubts about the medium- to long-term growth of this business. NGK must accept this reality and take action to remain an attractive company. First, the company must diligently execute a feasible growth strategy. Most certainly, at the core of this strategy will be the NV1000 initiative, which aims to achieve sales of over 100 billion yen from new businesses and new products in 2030. At the same time, the company must focus on securing profits from new projects to increase sustainable earnings and also consider restructuring or withdrawing from unprofitable businesses based on internal criteria for evaluating businesses based on capital efficiency and sales growth rate.

Hamada Capital markets expect a concrete next step for the NGK Group in terms of steering itself towards the future. If the company can communicate that clearly, then I think the stock price will rise naturally. NGK's transformation efforts are progressing steadily



I will closely monitor investments in carbon neutral-related businesses to evaluate the risks and rewards.

Miyamoto

Roundtable Discussion with our Outside Directors

and the company is beginning to see results. However, there is also the reality that these efforts are not being communicated effectively to the outside world and that their methods of communication are still insufficient. I also believe this communication should avoid statements such as “Some products that remain even amid the shift to EVs” or “The shift to EVs is more sluggish than initially expected.” The reason is that the company needs to focus on the next step and expectations for the future.

Miyamoto It is true that the shift to EVs has slowed due to policy changes in Europe and the US. While this has had a positive effect on NGK Group performance, it is a separate issue. My concern is regarding whether the slowdown in the shift to EVs will lead to

complacency in efforts to achieve NV1000, which is a pillar of the company's growth strategy.

Kawakami While I feel that the NGK Group's ceramic technology has great potential and I am monitoring the NV1000 initiative with great excitement, I am also concerned about the time frame. The company needs to change its current methods to achieve the speed that the market demands. Particularly with products for the digital society domain, technological trends change quickly, so NGK will need to work at a much faster pace. Thus far, the focus may have been on taking a certain amount of time to create something good, but I strongly feel that survival requires a change in NGK's sense of time required to Commercialization. In other words, this

means changing parts of the company's culture.

Sakuma In terms of improving capital profitability, the most important point is to pursue capital efficiency. This means ensuring that the return on equity (ROE) of each business does not hurt shareholder value and working to increase earning potential. NGK must continue improving its non-financial value, including through sustainability initiatives and efforts to strengthen governance. Increasing shareholder value through such measures is the responsibility of management and the true path to increasing PBR. However, if NGK cannot achieve success in such areas, then the company will have to consider options such as share buybacks and higher dividends to maintain and increase the value of shareholder holdings.

Further increasing the efficacy of the Board of Directors

Hamada I believe that the Board of Directors meetings have an open atmosphere that promotes frank exchanges of opinions and lively deliberations. The Board responds diligently to our opinions and questions as Outside Directors, and I feel that NGK has established a stance of embracing the strong criticism and opposing opinions that can only be brought by outside perspectives.

Sakuma I appreciate that there are always

briefings held before Board meetings. This system is incredibly efficient as these briefings include a Q&A session, which allows us to participate in the Board meeting with a certain level of resolution regarding doubts we may have.

Kawakami I feel the same. At the same time, I don't think enough time is being spent on evaluating the results of the measures being implemented. For example, what were the results of the investments? How many years did it take to recoup the investment? Also, if things did not go as planned, what were the reasons for this? I think that analysis should be done from a perspective that includes external factors, and that a review should be conducted so that those results can be reflected in future investments.

Miyamoto Perhaps Outside Directors should proactively propose matters to be monitored. Also, to enhance our supervision of management, I am wondering if it would be possible to create a forum for Outside Directors to exchange opinions outside of Board meetings. By discussing issues together, we can increase our awareness of issues and come up with better ideas. As members responsible for supervision, I also think it is important to have a common understanding of issues. Along those lines, I think we could further improve efficacy if Outside Directors were able to make agenda proposals for Board meetings, which currently are set up by management.

I believe that survival requires changing how the NGK Group thinks about the time frame for Commercialization and changing parts of its culture.

Kawakami





Pursuing even greater growth in the future will require identifying ways to monetize NGK's world-leading ceramic technology.

Sakuma

To NGK stakeholders

Kawakami The NGK Group's ceramic technologies are an irreplaceable asset. In this changing world, now is the time for the company to take on challenges, adapt flexibly, and apply the DNA that has enabled us to survive for over 100 years towards creating new products that will serve as a foundation for future generations. While there are many challenges to overcome, I will do my best to support the success of the NGK Group by promoting bold challenges in a wide variety of fields. As Outside Directors, we will work to provide support that leads to improvements in enterprise value and sustainable growth for the NGK Group.

Hamada As I mentioned earlier, improving enterprise value will require that the NGK Group clearly communicate with capital markets regarding what type of enterprise it wants to be in the future. I believe the key to achieving this lies in management and Outside Directors sharing information and working to enhance discussions towards NGK achieving its goals. In my role as an Outside Director, I will position myself as a representative of the capital markets, working objectively to judge NGK's enterprise value from the perspective of capital markets and contributing by exploring the best measures to increase shareholder value.

Miyamoto I think the president's stance will

be critical to advancing to the next stage, and I appreciate President Kobayashi's attitude of encouraging new challenges. Of course, not all challenges will be successful. However, nothing will change if we remain unchanged out of fear of failure. Failure brings lessons that can be turned into a source of success. As an Outside Director, I will fully support the NGK Group in its various challenges and contribute to future growth. I hope all stakeholders will continue to take a medium- to long-term perspective in watching over the NGK Group.

Sakuma The NGK Group possesses the world's best ceramic technologies. To aim for even greater growth moving forward, it will be important to utilize and monetize these technologies. I have worked in infrastructure, electricity, the environment, renewable energy,

and various other businesses over many years, and I have been deeply involved in the management of capital partnerships and operating companies in both Japan and overseas. I would like to use my cumulative experience and knowledge to offer constructive advice and recommendations, and to contribute towards helping the NGK Group take its next lead forward. I am confident that by sincerely addressing each issue and identifying a path towards resolution, NGK can strengthen its foundation for medium- to long-term growth and achieve transformation. I hope that stakeholders will look forward to the future of the NGK Group.

I will objectively judge the company's enterprise value from a capital market perspective and provide advice on the best policies for increasing shareholder value.

Hamada



Corporate Governance

Basic Approach

NGK Group's basic policy on corporate governance is to ensure legality in business activities and management transparency. The NGK Group has established a structure that can respond swiftly to business environment changes and has built and maintains a 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 enhances effectiveness of through debate and deliberation on important matters. This was accomplished by establishing the Executive Committee, Sustainability 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 management decision-making and supervisory functions from business execution functions, clearly defining and strengthening of the each roles.

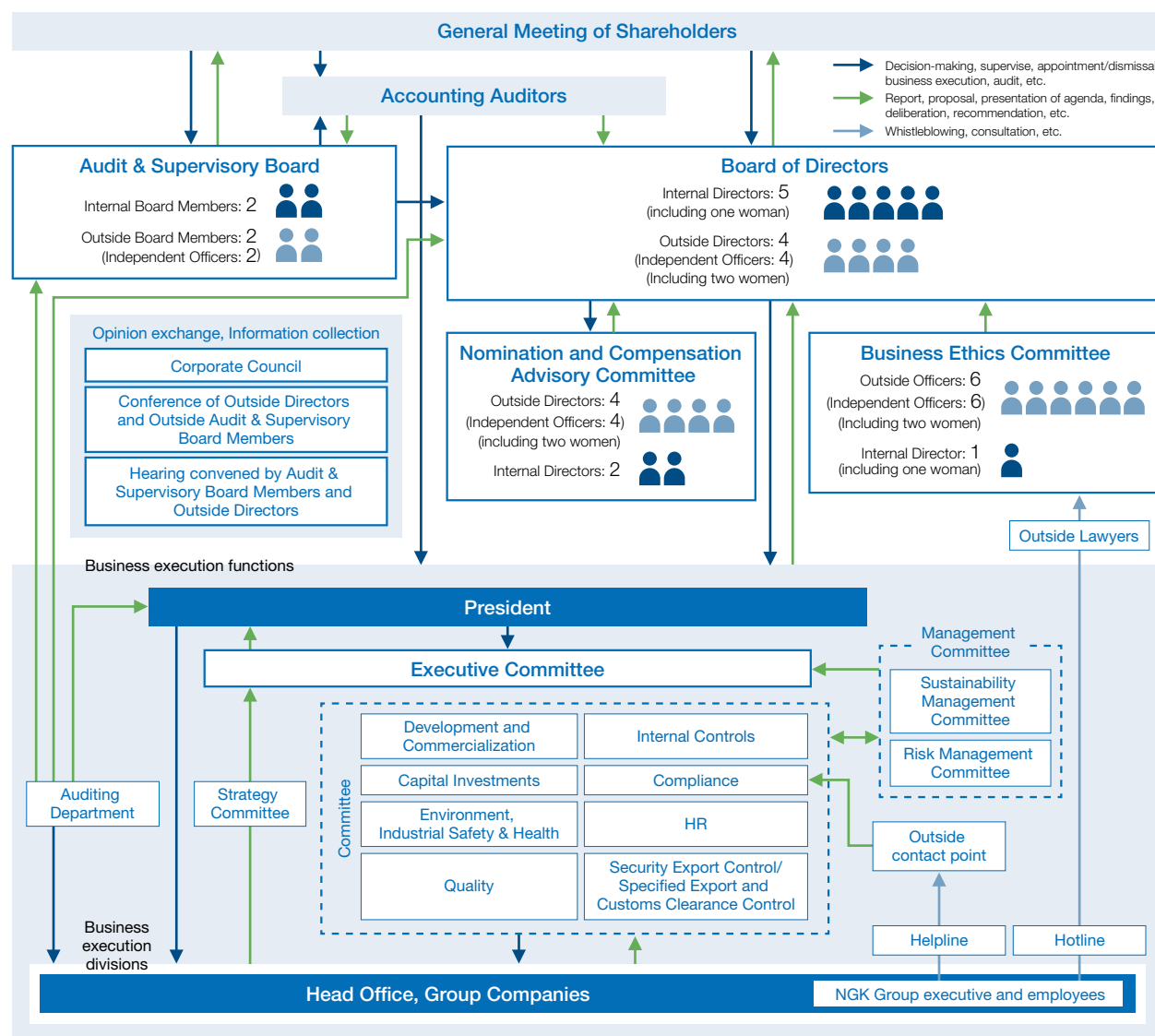
To strengthen the supervisory and oversight functions of the Board of Directors, we have mandated reporting to the Board from key committees that handle various risks surrounding NGK. To ensure the thorough implementation of the Corporate Governance Code objectives, we established the Nomination and Compensation Advisory Committee, Corporate Council, Conference of Outside Directors and Outside Audit & Supervisory Board Members, the Business Ethics Committee, and other committees.

We have also 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, ensuring compliance with society's laws, NGK Group's Articles of Incorporation, and corporate ethics. All executives and employees are well versed in the code and are obligated to abide by it.

Internal Control Systems

The NGK Board of Directors has established systems to ensure directors comply with laws, regulations, and NGK's Articles of Incorporation when executing their duties. These systems also ensure the appropriateness of business operations at NGK and its subsidiaries. The business execution bodies reporting to the president are responsible for operating them.

Corporate Governance System Chart



Basic Views on Internal Controls System and Status of Development
<https://www.ngk-insulators.com/en/sustainability/pdf/governance-system.pdf>



List of Directors and Audit & Supervisory Board Members (As of September, 25, 2025)

Directors

**Taku Oshima**

Representative Director and Chairman

(Important concurrent positions) Outside Director of Central Japan Railway Company, Outside Director of Toho Gas Co., Ltd., Outside Director of Nomura Holdings, Inc.

● 40,000
● 11

**Shigeru Kobayashi**

Representative Director and President

Overall Corporate Management, Responsible for Business Groups and Corporate NV Creation, Executive Committee Chair, Strategy Committee Chair, Sustainability Management Committee Chair, Risk Management Committee Chair

● 40,126
● 5

**Hideaki Shindo**

Director and Managing Executive Officer

Responsible for Sustainability Management Dept., Corporate Communications Dept., Corporate Planning Office, Secretarial Office, Finance & Accounting Dept., and Purchasing Dept., Senior Officer in charge of Group Companies, Sustainability Management Vice Committee Chair, Risk Management Vice Committee Chair

● 19,500
● 4

**Jun Mori**

Director and Managing Executive Officer

Top Executive R&D, Responsible for Corporate R&D, Manufacturing Engineering, Corporate Safety, Quality & Environment Dept., IP Strategy Dept., Digital Transformation & Innovation Dept., and ICT Dept., Development and Commercialization Committee Chair, Quality Committee Chair, Environment, Industrial Safety & Health Committee Chair

● 16,090
● —

**Mayumi Inagaki**

Director and Senior Executive Officer

Responsible for Auditing Dept., DIVERS Administration Office, Human Resources Dept., Group Compliance Dept., Legal Dept., and General Affairs Dept., Chief Compliance Officer, Compliance Committee Chair, Internal Controls Committee Chair, HR Committee Chair

● 13,741
● 1

Audit & Supervisory Board Members

**Emiko Hamada**

Outside Director

(Important concurrent positions) Outside Director of TAIYO YUDEN Co., Ltd. (Abbreviated history) Led product invention and commercialization of world's first products at Taiyo Yuden Co., Ltd. Engaged in research activities as professor and visiting professor at Nagoya University.

● 5,000
● 8

**Hiroshi Sakuma**

Outside Director

(Abbreviated history) Has held important positions at Mitsubishi Corporation, including serving as Division COO of the New Energy and Power Generation Division. Has extensive knowledge of the energy sector and has been involved in the management of large-scale organizations.

● 0
● 1

**Noriko Kawakami**

Outside Director

(Important concurrent positions) Chief Engineer, Power Electronics Systems Division, TMEIC Corporation (Abbreviated history) Involved in development and commercialization in the energy field at Toshiba Corporation and TMEIC Corporation. Fellow at the Institute of Electrical and Electronics Engineers.

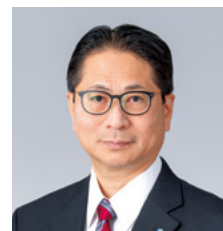
● 3,000
● 1

**Kengo Miyamoto**

Outside Director

(Important concurrent positions) Representative Attorney at Miyamoto International Lawyers (Abbreviated history) Has engaged in legal practice as an attorney both in Japan and overseas. Provides advice to Japanese and foreign companies covering a wide range of fields based on his extensive practical experience and expertise.

● 3,000
● 1

**Naoya Yagi**

Full-time Audit & Supervisory Board Member

● 4,306
● 2

**Koji Hasegawa**

Full-time Audit & Supervisory Board Member

● 1,040
● —

**Masayoshi Sakaguchi**

Outside Audit & Supervisory Board Member

(Important concurrent positions) Representative Director and Chairman of the Japan Automobile Federation (Abbreviated history) After joining the National Police Agency, he later served as Chief of the Akita Prefectural Police Headquarters, Chief of the Osaka Prefectural Police Headquarters, and Commissioner General of the National Police Agency.

● 0
● 6

**Takashi Kimura**

Outside Audit & Supervisory Board Member

(Abbreviated history) After joining Mitsubishi Bank Ltd. (now MUFG Bank, Ltd.), he served in various positions at the bank, including Managing Executive Officer.

● 0
● 3

Approach to the knowledge, experience, and capabilities of directors, and the number of directors

The skills required of directors include practical experience and leadership in the business fields of our Group, as well as expertise in areas such as finance, legal affairs, human resources and labor, information communications. Highly independent outside directors are required to have advanced expertise in areas such as law and corporate finance, as well as insight into international affairs, technology trends, and corporate management. The total number of directors is limited to 15.



Skills matrix for Directors and Audit & Supervisory Board Members, and the reasons for item selection

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

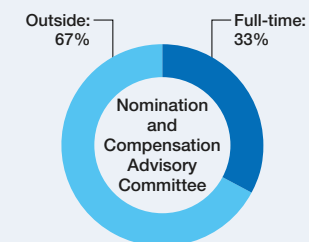
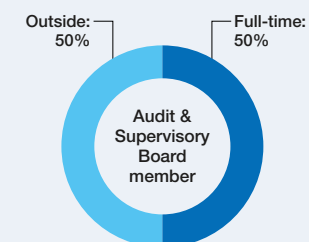
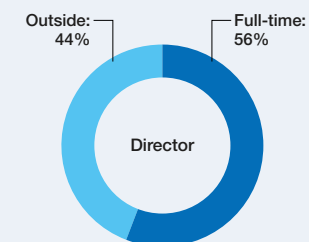


Skill Matrix of Directors and Audit & Supervisory Board Members

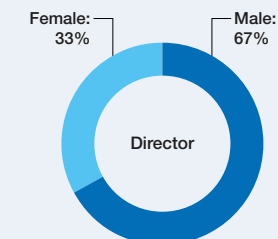
Name	Attributes			Field of experience							Specialized knowledge		
	Years in Office	Gender	Independent Officer	Business Management	Sustainability	Overseas business / International experience	Marketing	Manufacturing technology / R&D	Carbon Neutrality	Digital	Finance	Legal and Compliance	HR/Labor
Taku Oshima	11	Male		●	●	●		●	●				●
Shigeru Kobayashi	5	Male		●	●	●	●		●				
Hideaki Shindo	4	Male			●	●	●				●		
Jun Mori	—	Male			●	●	●	●	●				
Mayumi Inagaki	1	Female			●							●	●
Emiko Hamada	8	Female	●	●	●	●		●	●	●			
Hiroshi Sakuma	1	Male	●	●	●	●	●		●		●		●
Noriko Kawakami	1	Female	●		●	●		●	●	●			
Kengo Miyamoto	1	Male	●		●	●						●	●
Naoya Yagi	2	Male			●	●	●				●	●	
Koji Hasegawa	—	Male			●	●	●				●		
Masayoshi Sakaguchi	6	Male	●	●	●							●	●
Takashi Kimura	3	Male	●	●	●					●	●	●	●

Member Composition of the Board of Directors and Audit & Supervisory Board

Ratio of Outside Directors



Ratio of females



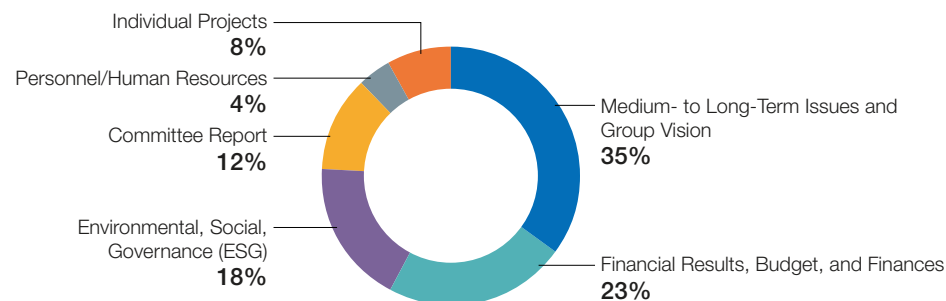
Activities of Board of Directors

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

Main Agenda Deliberated in FY2024

- | | |
|--|---|
| <ul style="list-style-type: none"> ■ Medium- to Long-Term Issues and Group Vision <ul style="list-style-type: none"> · Formulation of materiality action plans and KPI · Initiatives for new business creation (Progress report on New Value 1000) · Initiatives concerning business portfolio · Determining key risks to follow-up on ■ Financial Results, Budget, and Finances <ul style="list-style-type: none"> · Budget and financial results · Sale of long-term shareholdings · IR/SR activities report ■ Environmental, Social, Governance (ESG) <ul style="list-style-type: none"> · Progress report on fifth 5-Year Environmental Action Plan · Information disclosure based on TNFD · Formulation of competition laws compliance program · Renewable electricity procurement | <ul style="list-style-type: none"> ■ Committee Report <ul style="list-style-type: none"> · Report on principal committee activities ■ Personnel/Human Resources <ul style="list-style-type: none"> · Organization and Personnel · Deployment of senior management · Revision of human resources system for key personnel ■ Individual Projects <ul style="list-style-type: none"> · Investment in production facilities, R&D, etc. · Change to trade name |
|--|---|

Time Allocated to Key Topics



Analysis and Evaluation Results concerning the Effectiveness of Board of Directors

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

● Policy on Initiatives and Main Initiatives for FY2024, Based on the Effectiveness Evaluation Covering FY2023

(1) Board of Directors policy on initiatives

- The following items should continue to be monitored and regularly reported to the Board of Directors in order to achieve the NGK Group Vision
 - Status of the business portfolio revision
 - Progress of the New Value 1000 (aiming for sales of 100 billion yen from new commercialized products by 2030)
 - Progress of various committee activities and company-wide projects
 - Progress of human resources strategy
 - Status of company-wide risk management
 - IR/SR activities

[Primary Initiatives]

For each of above items, we set a reporting schedule so that each item is reported to the Board of Directors multiple times as annual agenda items. For our human resources strategy, to maximize the use of diverse human resources and promote autonomous action, we deliberated on the ideal personnel system for key personnel (management positions). This resulted in the Board voting to revise the Key Personnel System.

- Identify priority issues requiring deliberation and expand discussions related to long-term management plans and business strategies (including Group companies)

[Primary Initiatives]

Following up on FY2023, we held two expansion strategy meetings attended by outside officers. These meetings focused on the Energy Storage business and strategies for Group subsidiaries.

Corporate Governance

- We will continue to increase opportunities for dialogue between senior management and outside officers, and expand deliberations regarding succession plans and the development of candidates for senior management positions

[Primary Initiatives]

Lunchtime discussions between senior management and outside officers were held once per month, with meetings based on open seating. We also arranged interviews between Outside Directors and each Executive Officer to encourage the more active and substantive exchange of opinions. Furthermore, senior management attended interviews with the Audit & Supervisory Board members and Outside Directors to report on the status of business, etc.

- Further improve information provision to outside officers

[Primary Initiatives]

We have further increased opportunities for individual explanations by the relevant departments regarding items brought up at Board meetings, and have established a system that allows outside officers to view materials related to business execution used at management meetings, strategy meetings, and various committee meetings, etc., at any time.

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

- Strive to further share the status of committee discussions with the Board of Directors

[Primary Initiatives]

Committee meeting materials were used to share the status of deliberations and the content of discussions at Committee meetings in detail with the Board of Directors. When making decisions regarding the organization and human resources, the Representative Director and President reported to the Board on his intentions regarding the placement of senior management.

- Continue striving to further enhance information provided to the Nomination and Compensation Advisory Committee

[Primary Initiatives]

The committee secretariat provided each committee member with more detailed information, such as the careers, skills, and expected roles of new director and Audit & Supervisory Board member candidates.

● Methods of Effectiveness Evaluation for FY2024

A survey comprising a total of 30 questions, 6 questions evaluating the initiatives for FY2024, and two free-response entries was conducted on all directors (10 members) and all Audit & Supervisory Board members (4 members) at the beginning of April 2025, and the analysis and evaluation of the responses were entrusted to an external organization. The survey questions are also periodically reviewed in light of changes to the current environment.

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

● Summary of Evaluation Results for FY2024

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.

(Overall comments from the external organization)

- Our Board of Directors has an appropriate member structure, and the foundations that support Board functions, such as the commitment of each member and a healthy Board culture, have been appropriately established. Judging from the results of the past few years, these elements are being maintained as strengths
- A self-evaluation by the Nomination and Compensation Advisory Committee indicates that it holds effective discussions and appropriately shares information with the Board of Directors
- In response to the Policy for Initiatives of the Board of Directors for 2024 that was presented based on the results of last year's efficacy evaluation, it appears that efforts have been made to establish a forum for deliberations on business strategies, to expand information provision to outside officers, and to enhance the content of recommendations from the Nomination and Compensation Advisory Committee. These efforts are contributing to enhanced efficacy
- Although some progress has been made in discussions regarding business strategies, it is important to continue to expand deliberations. To further improve efficacy, it is also important to recognize the need to link these discussions to the formulation of concrete policy and measures, including business portfolio optimization and deliberations concerning unprofitable businesses towards realizing the Group Vision
- To ensure appropriate deliberations, an ongoing challenge will be to carefully select and narrow down the agenda items presented to the Board of Directors
- It has been pointed out that appropriately reviewing past management decisions and applying them to the future is important to enhancing deliberations
- Additional ongoing challenges include further efforts regarding succession planning and training, and deliberations by the Board concerning the performance evaluations for and compensation of senior management

● Policy for Initiatives for FY2025 to Further Improve Effectiveness

Based on the results of the evaluation in FY2024 and discussions by the Board of Directors, we have formulated the following policies for initiatives for FY2025. We will strive to improve the effectiveness of the Board of Directors and the Nomination and Compensation Advisory Committee through continuous efforts.

Corporate Governance

(1) Policies for initiatives of the Board of Directors

- To realize the NGK Group Vision, the Company will regularly report to the Board of Directors on the overall progress of the Medium-term Management Plan, efforts to convert our business portfolio, progress towards New Value 1000 (aiming for 100 billion yen in new product sales in 2030), the status of company-wide risk management, IR/SR activities, and the activities of various committees, as well as engage in deliberations and conduct monitoring concerning these issues
- Identify priority issues, expand business strategy discussions (including Group companies), monitor unprofitable businesses, and use this output to formulate specific policies and measures
- Further enhance opportunities for dialogue between senior management and outside officers, and enhance discussions concerning matters such as succession plans, the development of senior management candidates, and compensation for senior management

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

- Strive to enhance sharing with the Board of Directors on the status of deliberations by the Committee and further ensure the appropriateness of the Committee's deliberation process
- Continue to enhance information provision to the Committee regarding compensation and nominations
- Further enhance information provision to the Committee regarding compensation and nominations

Training Policies for Officers

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

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

The results for each in FY2024 are as follows.

1. Training on the Companies Act, competition laws, etc. by invited lecturers (2 times in total)
2. Outside officers visit to factories (5 times in total, Nagoya Site, Chita Site, Komaki Site, Ishikawa Plant, R&D facilities)

Briefings before meetings of the Board of Directors and business explanations (14 times in total)

Interviews with executive departments by Audit & Supervisory Board members and outside directors (14 times in total)

Status of activities by the Audit & Supervisory Board

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.

Main Agenda Items and Reported Matters in FY2024

■ Resolutions

- Audit & Supervisory Board members' audit policy and audit plan and audit reports of the Audit & Supervisory Board
- Consent to the compensation, etc. for the Accounting Auditor
- Confirmation of proposals and documents to be submitted to the General Meeting of Shareholders
- Formulation of standards for Audit & Supervisory Board member candidates
- Consent to comprehensive advance agreement process for non-assured engagement provided by the auditing firm

■ 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 Financial Results by the Finance & Accounting Department
- Report on the results of internal audits by the Auditing Department
- Confirmation of the document indicating information subject to electronic provision

Status of activities by the Nomination and Compensation Advisory Committee

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 (including handling by the Chief Executive Officer during states of emergency), matters relating to compensation for directors and executive officers, upper limits on the total compensation amount for directors and Audit & Supervisory Board members, and a succession plan for the Chief Executive Officer (formulation and revision of succession plan, progress on developing potential successors, and determination of successor candidates), etc. The committee reports its results to the Board of Directors. The committee (4 male members and 2 female members) consists of a majority of independent outside directors and a committee chairperson who is selected from among the independent outside directors. The chair and members are selected by the Board of Directors. In addition, one outside Audit & Supervisory Board member attends committee meetings as an observer to confirm the appropriateness of the deliberation process.

Corporate Governance

Main Agenda Items in FY2024

■ Agenda items

- Appointment of directors, representative directors, directors in key positions, and Audit & Supervisory Board members
- Compensation (cash and stock-related compensation) commensurate with the position of each individual director and executive officer
- Amount of performance-linked bonuses paid to each individual director this fiscal year
- Progress on development of successors to the Chief Executive Officer

Director and Audit & Supervisory Board member compensation

We established a compensation system for directors (excluding outside directors) and executive officers that contributes to the Group's sustainable growth and the enhancement of its medium- to long-term enterprise value. This system is aligned with the NGK Group Philosophy and realizing the NGK Group Vision.

Compensation for directors (excluding outside directors) and executive officers consists of three components: basic compensation, a performance-linked bonus, and stockbased compensation. To prioritize their independence from management, Outside Directors and Audit & Supervisory Board members are paid only fixed annual compensation, and do not receive performance-linked bonuses or stockbased compensation in the form of restricted shares.

The relative ratios of variable compensation and fixed annual compensation are determined with a focus on stability and improving medium and long-term performance. Variable compensation, which is comprised of a performance-linked bonus and the cash conversion value of allocated restricted shares, is set as an appropriate percentage of total compensation. The total amount of compensation, including basic compensation, is set according to the position and rank of each recipient. Compensation is set to an appropriate level relative to the size of our Company, which is determined based on data from reliable external organizations.

At the request of the Board of Directors, the Nomination and Compensation Advisory Committee, which consists of a majority of Independent Outside Directors, deliberates on the policies and procedures related to determining compensation. These deliberations include the following:

- Total maximum compensation for all Directors and Audit & Supervisory Board members
- Basic compensation, the base amount for calculating performance-linked bonuses, and the number of restricted shares to be allocated (the level of monetary claims for payment issued as compensation for restricted shares granted) to each individual director and executive officer based on their respective position and rank
- The amount of the performance-linked bonus for each individual director

The Committee then submits a report on the results of its deliberations to the Board of Directors.

The Board of Directors determines the amounts of compensation for directors and executive 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

Basic compensation	+	Performance-linked bonus	+	Restricted shares
Fixed annual compensation corresponding to position		Bonus corresponding to annual business performance		Same benefits and risks as shareholders
Directors: 800 million yen or less in an annual amount (including an annual amount of 60 million yen or less as the compensation limit for outside directors)			Directors: Annual amount not exceeding 200 million yen	
Audit & Supervisory Board members: 150 million yen or less in annual amount				

Composition Ratio of Compensation for Directors and Audit & Supervisory Board Members in FY2024

Composition of compensation	Fixed/Variable		Fixed compensation	Variable compensation	
	Type of incentive		—	Short/Medium-term	Long-term
	Type of compensation		Basic compensation	Performance-linked bonuses	Restricted share compensation
Eligible for compensation	Directors	Representative directors	48%	38%	14%
		Directors (excluding representative directors)	56%	28%	16%
		Outside Directors	100%	—	—
	Audit & Supervisory Board members		100%	—	—

*Restricted share compensation is a mechanism which assumes that shares will be held long-term until the director steps down, and which is indirectly linked to company performance through stock price

Items Related to Performance-linked Compensation, etc.

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

NGK pays its directors (excluding outside directors) and executive officers performance-linked bonuses as performance-linked compensation. These are calculated using the following indicators.

Short-term perspective	• Percent change in net sales, operating income, and net income for the current fiscal year compared to the previous fiscal year • Targets and percent change for return on invested capital (ROIC)* set at the beginning of (or during) the period *Using NGK ROIC (calculated based on operating income, accounts receivable, inventories, and fixed assets)
Medium- to long-term Indicators	• Percent change in operating income attained for medium- to long-term performance targets in the NGK Group Vision • Rate of achievement of Keep Up 30* for new products and new business creation • Rate of achievement of single-year CO₂ emissions reduction targets * A target of 30% or higher net sales from new products (as defined by NGK)

Percent Allocated per Item for Performance-linked Bonuses and Performance Appraisal Indicators (Excluding Individual Appraisals) and Results for Main Indicators Used to Calculate Performance-linked Bonuses in FY2024

Item	Percent Allocated	Evaluation Coefficient Variance Ratio	Performance Appraisal Indicators *Calculated in practice by replacing each indicator with the variance ratio and evaluating it
Short-term Indicators	40%	-100% to +100%	Consolidated results (net sales / operating income / net income) - Actual values for previous period (FY2023): ¥578.9 billion / ¥66.3 billion / ¥40.5 billion - Actual values for current period (FY2024): ¥619.5 billion / ¥81.2 billion / ¥54.9 billion - Percent change: +7% / +22% / +35%*
		-100% to +100%	Return on invested capital - Target value at beginning of period (FY2024): 11.0% - Actual value for current period (FY2024): 12.1% - Percent change: +1.1%*
Medium- to long-term Indicators	60%	-100% to +100%	Medium- to long-term performance targets (operating income) - Target value for current period (FY2024): ¥77.5 billion - Actual value for current period (FY2024): ¥81.2 billion - Percent change: +4.8%
		-100% to +100%	Rate of achievement of material issues (important items listed below) - Keep Up 30* for new products and new business creation: Not achieved - Single-year CO ₂ emissions reduction targets: 600,000 tons achieved - Other items (Progress of internal projects, etc.)

● Non-monetary Compensation etc.

Overview of restricted stock compensation issued in FY2024

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

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

Restricted Shares 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.

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.* 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.

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

Amount of Compensation for Directors and Audit & Supervisory Board Members

Total Compensation for Directors and Auditor & Supervisory Board Members (FY2024)

Director category	Total compensation (million yen)	Total compensation by type (million yen)			Applicable officers (people)
		Fixed compensation	Performance-linked compensation	Restricted share compensation	
Directors (excluding Outside Directors)	610	303	217	89	7
Outside Directors	53	53	—	—	6
Audit & Supervisory Board Members (excluding Outside Audit & Supervisory Board Members)	72	72	—	—	2
Outside Audit & Supervisory Board Members	28	28	—	—	2

Notes:

- The total amount of compensation for directors (excluding outside directors), the total amount of compensation by type, and the number of directors receiving compensation as noted above, includes one director who resigned from their position on June 26, 2024 and the amount of compensation they received
- The total amount of compensation for outside directors, the total amount of compensation by type, and the number of directors receiving compensation as noted above, includes two outside directors who resigned from their positions on June 26, 2024 and the amount of compensation they received

Message from the Chair of the Nomination and Compensation Advisory Committee



I will support the independence and functionality of the Board of Directors through open committee management focused on providing an external perspective.

I will work to further strengthen corporate governance and contribute to improving enterprise value over the medium- to long-term.

Emiko Hamada

Outside Director
Chair of the Nomination and
Compensation Advisory Committee

In June 2024, I was appointed to chair the Nomination and Compensation Advisory Committee. Serving as an advisory committee to the Board of Directors, the Nomination and Compensation Committee is responsible for deliberating on human resource matters related to Directors and Audit & Supervisory Board Members and matters related to compensation to Directors, including compensation for Executive Officers. This Committee then reports on those deliberations to the Board of Directors. The Nomination and Compensation Committee is comprised of four Outside Directors, two full-time Directors, and an outside Audit & Supervisory Board Member who serves as an observer. Outside Directors lead discussions to ensure fair and transparent deliberations. Additionally, the three Outside Directors other than myself were appointed in FY2024. Over the past year, with new members bringing different experiences and areas of expertise joining the Committee, I feel that we have significantly increased the depth of our discussions.

Committee meetings are held three to four times each year. In FY2024, a total of three committee meetings were held. We have many opportunities to meet with internal personnel at Board of Directors' meetings and Executive Committee meetings. There is also a considerable amount of time to communicate with internal personnel at various meetings other than Nomination and Compensation Advisory Committee meetings. Based on this, I think the current number of meetings is adequate. For example, when deliberating on proposed nominations for Directors, because information is shared on a regular basis about candidates shortlisted during the previous stage and issues have already been identified, the committee is able to engage in meaningful discussions from the very beginning. There are no barriers between positions, and meetings function as a forum for the frank exchange of opinions, and I believe such thorough discussion is enabling appropriate decision-making.

Key issues discussed for FY2024 include pooling promising talent, CEO succession planning, and reviewing remuneration standards. Most recently, the

Outside Directors proposed that "the evaluation criteria for performance-linked compensation for Directors and Executive Officers should include not only overall performance but also the results of individual businesses subject to priority measures." This was approved on the spot. Regarding the compensation system for directors, given that the current system involves a large proportion of fixed compensation, there have been opinions that "the proportion of performance-linked compensation should be increased to encourage appropriate risk-taking." We will continue to discuss this issue while taking into account factors such as changes in the business environment and the reaction of the stock market.

Another important issue that should be led by this Committee is advancing a CEO succession plan. Looking ahead, the appointment of a successor to the president is a top priority. All Committee members need to be aware of this great responsibility and apply their respective knowledge and experience as we engage in discussions on candidate selection. As a Committee, we intend to engage in this issue while maintaining objectivity, transparency, and fairness, and giving due consideration to the timing of deciding on a successor.

The NGK Group is accelerating the conversion of its business structure from one centered on the automotive industry to a structure comprised of twin pillars: carbon neutrality and contributions to the digital society. Utilizing the ceramic technology it has cultivated for over 100 years, the Group is challenging itself to create new value in a variety of domains, some of which are already beginning to take shape as businesses. As the Group evolves with each transformation, it is also steadily strengthening corporate governance to support sustainable growth. Amid such change, I focus on the importance of maintaining the perspective of shareholders and investors. As Chair of the Nomination and Compensation Advisory Committee, I will build strong relationships of trust with stakeholders through frank and open Committee management, and will contribute to improving the enterprise value of the NGK Group.

Dialogue with Stakeholders

Approach of Dialogue with Stakeholders

The NGK Group works to promote an understanding of our Group among customers, suppliers, shareholders/investors, local communities, governments/international organizations, universities/research institutes, and employees. Through dialogue with all our stakeholders, we continuously work to improve our activities and initiatives.



Communication with Stakeholders
<https://www.ngk-insulators.com/en/sustainability/management.html#sec05>



Dialogue with Shareholders and Investors

NGK Group strives to explain management conditions and management policy accurately and swiftly and maximize corporate value through two-way communication with shareholders and investors.

We work to promote constructive dialogue by diligently responding to questions from shareholders raised at the General Meeting of Shareholders and inquiries made to our corporate website. Responses are made under the supervision of the respective directors in charge of the Finance & Accounting Dept. and the General Affairs Dept., with both departments working in close cooperation with relevant departments to ensure an appropriate response. We also focus on opportunities for frank dialogue with institutional investors, with senior management directly involved the various meetings we hold, including earnings briefings and overseas IR activities. The results of these dialogues are regularly reported to the Board of Director to provide feedback to management, as we strive to improve management efficacy and transparency.

Status of dialogue with shareholders and investors (FY2024)

Format of dialogue and number of sessions

Financial results briefings	2 times
Small meetings in Japan (institutional investors)	3 times
Individual meetings in Japan (institutional investors/analysts/ESG officers, voting officers)	151 meetings
Overseas IR (institutional investors)	3 times
Investment forum participation	1 time
Asset management briefings (individual investors)	2 times

Major dialogue themes

Management strategy and growth potential	• Status of business portfolio shift • Status of New Value 1000 (NV1000) and new product development, and expectations for future profits • Correlation between manufacturing facility and human capital investments and growth strategy • Concrete correlation between intellectual property and intangible assets strategy and improving enterprise value
Individual businesses	• Changes in demand trends and competitive environment for each business • Status of price revisions to reflect soaring costs • Business strategy for unprofitable businesses
Financial strategy	• Our approach to shareholder capital cost adequacy • Correlation between business strategy and capital allocation • Approach to shareholder returns
Governance, etc.	• Policy on maintaining cross-shareholdings • Status of promoting women's workplace advancement • Status of initiatives related to CO₂ reduction, biodiversity, and the environment • Increase opportunities for dialogue with Outside Directors

Initiatives to improve management (reporting to Board of Directors and Executive Committee (twice/year))

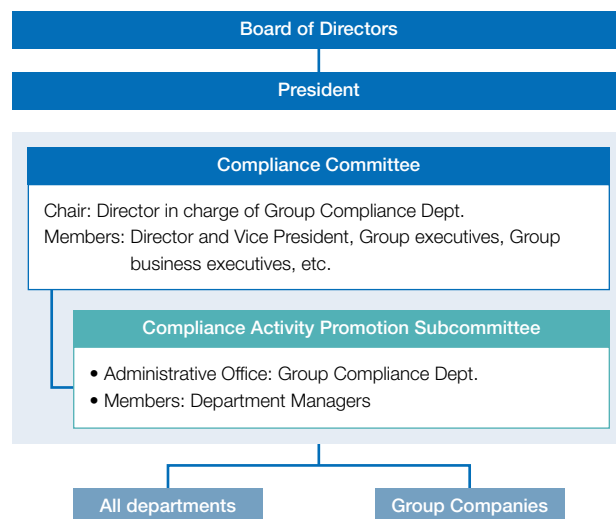
- Promote transformation for the business structure conversion outlined in the NGK Group Vision (revise key personnel system, develop personnel for digital transformation, and launch co-creation facility (NGK Collaboration Square DIVERS))
- Disclose results for financial metrics such as ROE and ROIC, and evaluate improvement measures
- Diversification and enhancement of dialogue with investors

Compliance

Compliance Promotion Structure

The NGK Group has established a Compliance Committee, which reports directly to the president. A Compliance Activity Promotion Subcommittee was established as part of the Compliance Committee to ensure proper execution of the Committee's work. The Compliance Committee regularly reports the matters it handles to the Board of Directors, and the Board of Directors supervises the activities of the Compliance Committee. To create an effective compliance structure, since FY2021 we assign supervisors and staff to Group companies in Japan and overseas to advance discussions related to compliance. We also have adopted a bi-directional training system for the entire Group to confirm the level of comprehension concerning compliance and to evaluate improvement measures. In the future, we are aiming to establish a structure that enables the autonomous promotion of compliance by each company.

Compliance Promotion Structure Chart



Whistleblowing System

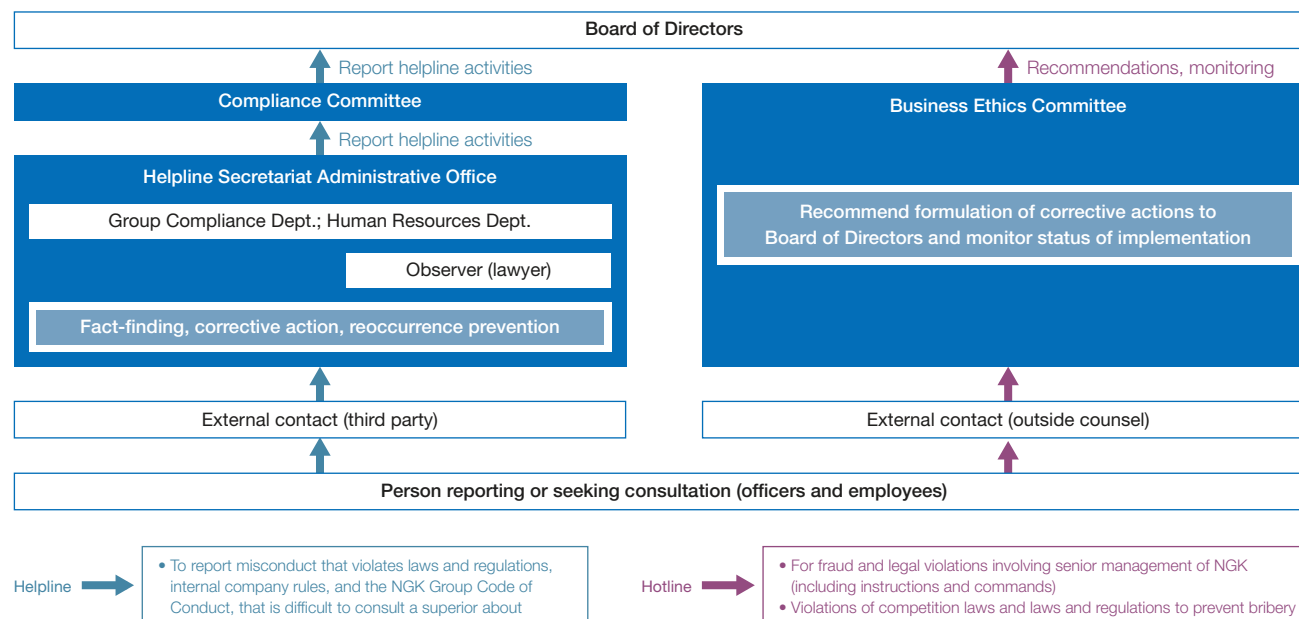
The Helpline and Hotline can be used by everyone who works at NGK and every Group company location. This includes officers, employees, employees dispatched on external assignments, advisors, contract employees, temporary employees based on a temporary employment agreement, resident employees accompanying a service contract, and those who have left the company within the last year. Reports and consultations are generally accepted by an external contact operated by a third party via telephone or the internet. The systems handle consultations and reports not only in Japanese but also in English. Additionally, if the reporter or consulters prefers not to disclose their name or affiliation to the reception window or company (anonymity), their reports and consultations will be accepted anonymously.

Our company rules guarantee protection of those seeking advice or reporting issues, and the NGK Group Code of Conduct prohibits retaliation against those who make reports.

Upon receiving a report or consultation, we will carry out the response process from investigation to corrective actions under the advice of external independent lawyers and all the processes will be conducted in a fair, impartial and honest manner. If the investigation reveals misconduct or a violation of the law, NGK will impose penalties on those involved in accordance with our employment regulations.

	Compliance Promotion Structure https://www.ngk-insulators.com/en/sustainability/governance-compli-structure.html	
	Initiatives to Ensure Thorough Compliance https://www.ngk-insulators.com/en/sustainability/governance-compli-promotion.html	
	Anti-Corruption https://www.ngk-insulators.com/en/sustainability/governance-compli-corruption.html	

Organization of Whistleblowing System Chart

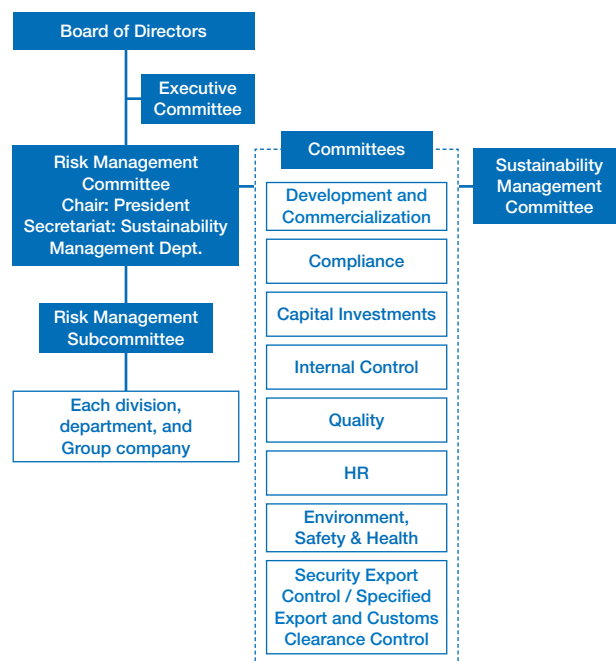


Risk Management

Basic Approach

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

Risk Management Structure Chart



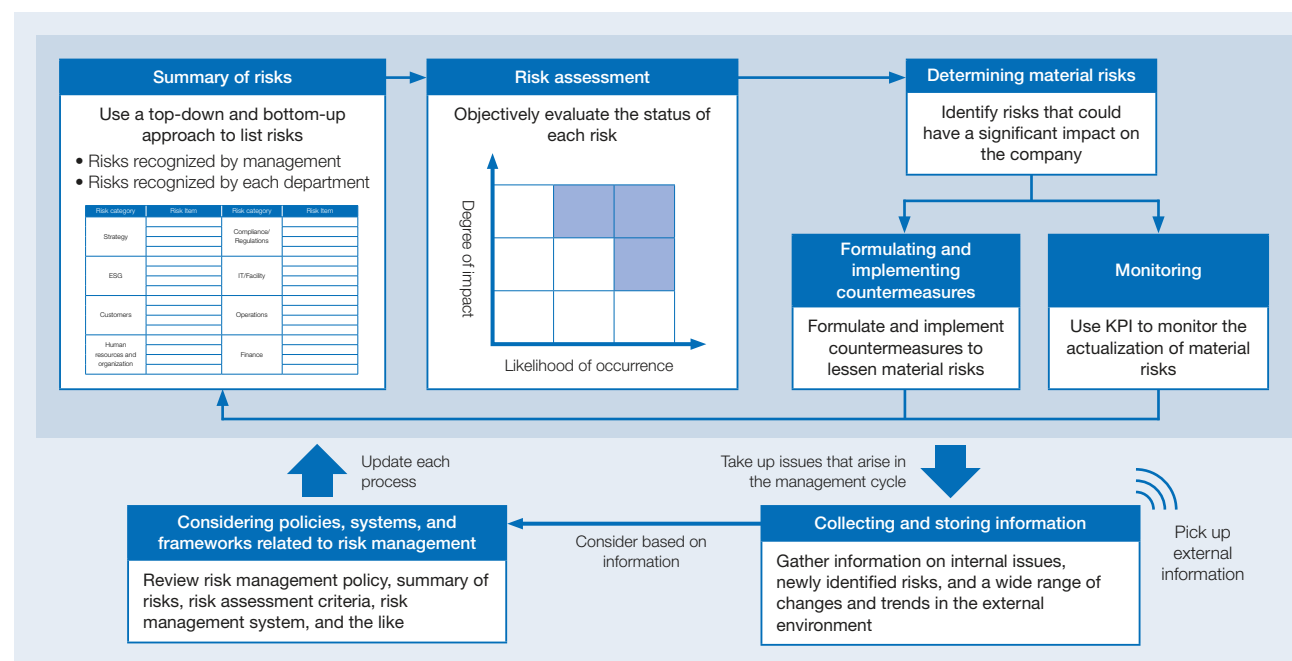
Risk Management Structure

In FY2023, the NGK Group established a new Risk Management Committee chaired by the President, and is comprehensively managing the Group's significant risk issues under the supervision of the Board of Directors in accordance with the risk management process described below. The risk management structure in question, is managed independently of the Audit & Supervisory Board.

Risk Management Process

To realize the NGK Group Vision, the Board of Directors outlines the NGK Approach to Risk Management and decides on the direction of initiatives depending on the type of risks, which we classify as "risks NGK should take" or "risks NGK should avoid." Applying this approach and referencing the

Material Risk Management Cycle



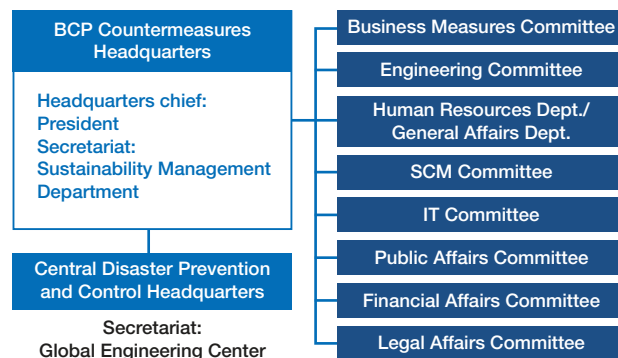
COSO-ERM Framework*, the Risk Management Committee has established a structure for regularly analyzing and evaluating risks, identifying and reviewing important risks, and for departments in charge to conduct monitoring and implement countermeasures. To identify important risks, once a year we apply both a top-down and a bottom-up approach to identifying the risk factors impacting our business operations. Based on that analysis, we review our risk assessments from the perspective of factors such as the impact level of each risk and likelihood of occurrence. We also flexibly address risks that have suddenly increased in importance. Following the 2024 US presidential elections, we held discussions with outside experts focused on tariff policy and the potential impact on our business.

*COSO-ERM: An international framework created by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in the USA, that aims to manage the risks facing businesses and integrate strategy and performance

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. To increase our emergency response capabilities in the event of a disaster, we also conduct drills based on a scenario plan that assumes a large-scale disaster, such as a Nankai Trough megathrust earthquake, to identify problem points. Lessons learned from this training are applied towards making improvements to our 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 Chart



*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



Risk Management

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



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 handles electronic data is provided with our Electronic Information Security Handbook and is trained in the proper use of data, as well as made aware of the need to contact the General Affairs Department and ICT Department if their devices are lost, infected with a computer virus, or otherwise compromised. 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 FY2024, we conducted visits to our Group companies outside Japan in the USA and China.

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 USA. In FY2024, we also carried out incident response training for officers, and training for all members of our headquarters and Group companies in Japan concerning email spoofing. By getting them to recognize the threats close at hand, we hope to improve their awareness of security. No security incidents occurred in the NGK Group in FY2024 that would affect our business activities.



Information Security

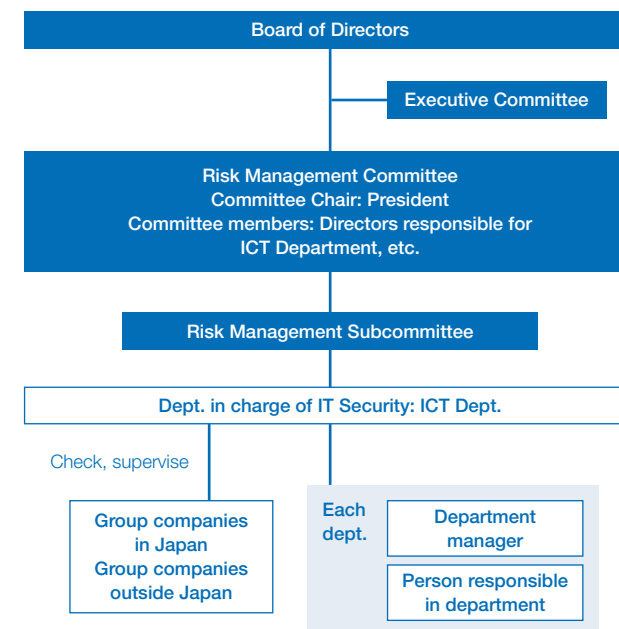
<https://www.ngk-insulators.com/en/sustainability/governance-information.html>



IT Security Management Framework

To address rapid advancements in information and communications technology, in FY2010 we formulated the NGK Group IT Security Standards with the goal of developing an IT security structure based on shared Group standards to increase our level of IT security. These standards are revised annually to reflect changes and trends in global society, and then shared with all Group companies to ensure consistency in Group IT security. In FY2024, we included cloud service usage status to the scope of management. Risks related to IT security are managed by the Risk Management Committee and reported to the Board of Directors at least once per year. We are also working to more closely align our emergency response structure for addressing security incidents, including attacks against important systems, with our internal structure for risk management.

IT Security Management Framework Chart



*When security incidents impacting critical systems occur, our response is based on the Basic Rules of Crisis Management

11-Year Key Financial Data

(Millions of yen)

	2015/3	2016/3	2017/3	2018/3	2019/3	2020/3	2021/3	2022/3	2023/3	2024/3	2025/3
Net sales	378,665	435,797	401,266	451,125	463,504	441,956	452,043	510,439	559,240	578,913	619,513
Cost of sales	254,386	289,266	272,434	312,107	323,224	313,458	329,061	347,748	405,463	423,059	443,540
Selling, general, and administrative expenses	62,700	65,633	65,619	68,991	75,574	73,496	72,158	79,163	87,015	89,456	94,731
Operating income	61,577	80,898	63,212	70,026	64,705	55,000	50,823	83,527	66,761	66,397	81,241
Net income attributable to owners of the parent	41,504	53,316	36,379	45,814	35,506	27,135	38,496	70,851	55,048	40,562	54,933
Capital expenditures	30,366	45,437	60,101	71,713	105,336	93,997	50,831	38,130	43,694	47,296	48,807
Research and development expenses	13,942	17,410	18,653	21,100	23,271	22,928	22,448	23,551	26,157	31,605	29,590
Net cash provided by operating activities	73,002	59,445	80,172	50,554	61,224	53,200	85,641	94,831	97,949	99,159	96,658
Net cash used in investing activities	(39,495)	(47,772)	(56,452)	(49,413)	(109,743)	(60,830)	(51,724)	(46,291)	(52,006)	(68,593)	(55,081)
Net cash provided by financing activities	(26,000)	(373)	(13,013)	22,546	3,564	(18,796)	12,250	(45,263)	(34,568)	(36,123)	(34,219)
Total assets	702,234	711,897	759,434	826,243	863,636	833,085	908,967	982,833	1,029,168	1,127,576	1,142,986
Interest-bearing debt	156,203	163,973	174,150	211,573	229,423	234,400	264,244	252,350	253,356	259,325	252,242
Net assets	404,001	417,972	427,593	472,863	489,245	469,118	517,892	589,594	642,446	703,225	727,506
Profit per share (yen)	127.11	163.28	112.71	142.42	110.35	84.73	121.61	226.56	177.47	133.65	185.96
Cash dividends per share (yen)	28	38	40	44	50	50	30	63	66	50	60
Ratio dividends to net worth (%)	22.0	23.3	35.5	30.9	45.3	59.0	24.7	27.8	37.2	37.4	32.3
Return on equity (ROE) (%)	11.4	13.3	8.8	10.4	7.6	5.8	7.9	12.9	9.0	6.1	7.8
Equity ratio (%)	55.8	57.1	54.9	55.8	55.3	55.0	56.3	59.3	61.7	61.7	63.0
Price-earnings ratio (PER)	20.2	12.7	22.4	12.9	14.6	16.7	16.6	7.7	9.9	15.3	9.9
Price-book value ratio (PBR)	2.1	1.7	1.9	1.3	1.1	1.0	1.3	0.9	0.8	0.9	0.8
Closing stock (yen)	2,565	2,079	2,520	1,834	1,608	1,417	2,024	1,753	1,752	2,040	1,836
Number of employees, end of year (persons)	16,217	16,657	17,517	18,783	20,115	20,000	19,695	20,099	20,077	19,540	19,931

11-Year Key Non-Financial Data

	2015/3	2016/3	2017/3	2018/3	2019/3	2020/3	2021/3	2022/3	2023/3	2024/3	2025/3
GHG emissions (Scope 1: Energy-origin CO ₂)* ¹ (10,000 metric tons, NGK Group)	29	31	32	32	32	31	26	29	25	24	21
GHG emissions (Scope 2: Energy-origin CO ₂) (10,000 metric tons, NGK Group)	39	45	49	52	55	56	49	33	31	32	33
GHG emissions (Scope 3) (10,000 metric tons, NGK Group)	—	—	—	(87.7)* ²	(104.7)* ²	(97.7)* ²	(89.3)* ²	344.9	351.9	327.0	375.3
Water withdrawal (10,000 m ³ , NGK Group)	276	285	409	432	453	433	378	433.6	414.3	422.6	403.8
VOC emissions (metric tons, NGK Group)	6	7	155	145	145	68	83	77	107	88	46
PRTR substance emissions (metric tons, NGK Group)	15	14	163	154	128	76	89	84	110	92	49
Total water discharge (10,000 m ³ , NGK Group)	196	197	279	287	281	314	253	274	268	271	264
Waste emissions (10,000 metric tons, NGK Group)	5.7	5.9	5.9	5.9	5.8	5.4	4.6	5.4	4.7	4.8	4.4
Number of employees (persons, non-consolidated)	3,569	3,700	3,937	4,142	4,119	4,224	4,316	4,382	4,547	4,775	4,876
Employee breakdown (female) (% , non-consolidated)	12.9	12.6	12.7	12.5	12.6	12.8	13.0	12.9	12.7	13.0	13.2
Rate of female managers (% , non-consolidated)	1.8	1.8	1.9	2.0	2.2	2.9	3.0	3.4	3.8	3.7	4.0
Rate of female managers (% , overseas NGK Group companies)	—	16.6	15.3	21.0	16.0	20.2	22.7	23.1	19.4	21.3	20.5
Number/rate of disabled employees (persons/% , non-consolidated)	56 (2.23)	56 (2.18)	55 (2.03)	57 (1.90)	62 (1.92)	135 (2.20)	145 (2.35)	155 (2.46)	160 (2.43)	172 (2.55)	195 (2.83)
Lost time incident rate (non-consolidated)* ³	0.00	0.29	0.34	0.11	0.40	0.00	0.10	0.19	0.28	0.28	0.18
Social contribution expenditure (100 million yen, non-consolidated)	3.31	3.46	3.15	3.00	3.02	2.73	2.96	5.33	7.54	6.41	7.78
Number of directors (persons, non-consolidated)	12	12	13	12	12	13	11	9	9	10	10
Number of outside directors (persons, non-consolidated)	2	2	2	3	3	3	3	3	3	4	4
Total compensation of directors (million yen, non-consolidated)	581	723	803	799	698	660	715	820	678	667	763
Number of patents held (Japan) (non-consolidated)	2,719	2,907	3,038	3,191	3,352	3,513	3,521	3,374	3,448	3,536	3,275
Number of patents held (overseas) (non-consolidated)	3,911	4,042	4,134	4,186	4,346	4,485	4,452	4,444	4,589	4,780	4,603

Note: The values for Scope 1 and Scope 2 (CO₂ emissions from energy sources) were calculated by retroactively changing the emission factor for electricity (a factor that converts the amount of electricity used into CO₂) from a conventional fixed value to the actual value of electricity companies for each fiscal year in 2021

*1 Includes offsets from carbon neutral LNG use from FY2021 onward

*2 Non-consolidated upstream

*3 Aggregate for calendar years

Corporate Outline/Stock Information/External Evaluation (As of March 31, 2025)

Corporate Outline

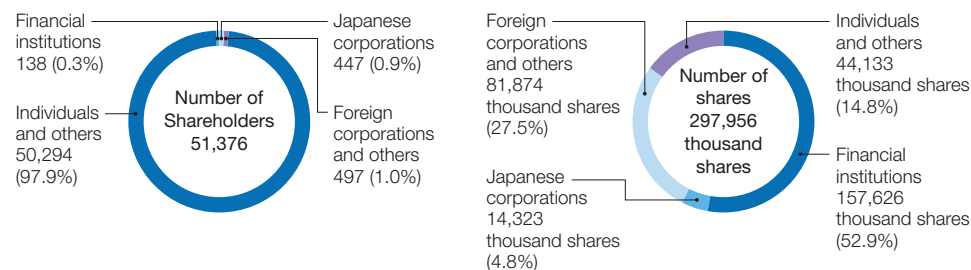
Company name	NGK Insulators, Ltd.	Paid-in capital	70.1 billion yen
Address	2-56 Suda-cho, Mizuho, Nagoya 467-8530, Japan Telephone + (81) 52-872-7181	Net sales	619.5 billion yen (consolidated, for FY2024)
Established	May 5, 1919	Consolidated subsidiaries	46
		Equity-method affiliates	1
		Employees	NGK 4,876 Consolidated 19,931
		Stock exchange code	5333

Stock Information

Total number of shares authorized	Major Shareholders		
735,030,000 shares	Names of shareholders	Number of shares held (1,000 shares)	Ratio to total (%)
Total number of shares issued			
297,956,996 shares (Including 4,861,605 shares of treasury stock)	The Master Trust Bank of Japan, Ltd. (Trust account)	50,965	17.38
	Meiji Yasuda Life Insurance Company	21,695	7.40
	The Dai-ichi Life Insurance Company, Limited	21,457	7.32
Total number of shareholders	Custody Bank of Japan, Ltd. (Trust account)	17,448	5.95
51,376 persons	MUFG Bank, Ltd.	7,204	2.45
Listed stock exchanges	National Mutual Insurance Federation of Agricultural Cooperatives	7,029	2.39
Tokyo Stock Exchange	Aioi Nissay Dowa Insurance Co., Ltd.	4,387	1.49
Nagoya Stock Exchange	STATE STREET BANK AND TRUST COMPANY 505001	3,896	1.32
	STATE STREET BANK AND TRUST COMPANY 505103	3,676	1.25
	THE BANK OF NEW YORK MELLON 140044	3,661	1.24

Note: The Company retains 4,861,605 shares of treasury stock, but those shares are excluded from the above list of major shareholders. Furthermore, the above shareholding ratio is calculated based on the number of shares after deducting the number of treasury shares from the total number of issued shares, rounded down to the nearest one-thousandth

Distribution of Shares



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.



External Recognition

NGK has been selected for the Dow Jones Best-in-Class Asia Pacific Index, one of the leading indices for socially responsible investment, the Dow Jones Best-in-Class Indices. We were also selected to the FTSE4Good Index Series^{*1}, an ESG investment index created by FTSE Russell. This list is comprised of companies evaluated based on criteria related to ESG. NGK was also selected to the FTSE Blossom Japan Index^{*2}, MSCI Japan Empowering Women Index (WIN), and the MSCI Japan ESG Select Leaders Index, all of which have all been adopted by the Government Pension Investment Fund (GPIF).



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^{*1} Click here for details on the FTSE4Good Index Series: <https://www.ftserussell.com/products/indices/ftse4good>

^{*2} Click here for details on the FTSE Blossom Japan Index: <https://www.ftserussell.com/products/indices/blossom-japan>



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NGK Group Integrated Report

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■ For more information:
2-56, Suda-cho, Mizuho, Nagoya 467-8530, Japan
NGK Insulators, Ltd.
Sustainability Management Department
E-mail: pr-office@ngk.co.jp

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