

IGNITE YOUR SPIRIT

NGK SPARK PLUG CO., LTD.

14-18 Takatsuji-cho, Mizuho-ku, Nagoya 467-8525
<https://www.ngkntk.co.jp/english/>

Public Relations Dept., Corporate Strategy Gr.
Phone: 81-52-872-5896 Fax: 81-52-872-5951



COMMUNICATION ON
PROGRESS

This is our **Communication on Progress**
in implementing the principles of the
United Nations Global Compact and
supporting broader UN goals.

We welcome feedback on its contents.

NGK SPARK PLUG CO., LTD.

Integrated Report 2020

Year ended March 31, 2020

Beyond ceramics, eXceeding imagination

Editorial Policy

NGK SPARK PLUG has been issuing an annual integrated report since 2017 with a view to helping all stakeholders deepen their understanding of its medium- to long-term value creation efforts. This year's report has been edited with a focus on introducing our newly established long-term plan and vision—2030 Long-Term Management Plan NITTOKU BX and 2040 Vision: “Change drastically beyond the current way”—particularly describing approaches to implementing and realizing them from financial and non-financial viewpoints.

This publication is also intended to serve as a tool to respond to various opinions and inquiries we receive from stakeholders through our business and IR activities throughout the year. We look forward to receiving frank opinions from many people.

Scope and Period Covered

Period covered : FY2019 (From April 1, 2019 to March 31, 2020)

Also includes some information about our FY2020 activities.

Scope covered : NGK SPARK PLUG Group

Also includes some non-consolidated information about NGK SPARK PLUG.

Guidelines for Reference

The International Integrated Reporting Framework, the International Integrated Reporting Council (IIRC); Guidance for Integrated Corporate Disclosure and Company-Investor Dialogues for Collaborative Value Creation, the Ministry of Economy, Trade and Industry

Forward-looking statements

This report contains forward-looking statements regarding NGK SPARK PLUG's future plans, strategies and performance. Please understand that actual results may differ substantially from these statements.



▶ <https://www.ngkntk.co.jp/english/>

This report focuses on the information that is essential for the enhancement of our corporate value. For details of our technologies, products and financial affairs, please visit our website. For detailed information about our corporate social responsibility (CSR), please refer to the webpages on our CSR activities as well as to our CSR reports and the Sustainability Data Books.

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Maintain Our Strengths

Corporate Message

IGNITE YOUR SPIRIT

IGNITE Your drive, dreams and **SPIRIT**

NGK SPARK PLUG has been a leader in manufacturing for 80 years.

Our desire is to live in a healthier and more beautiful world where all our dreams can come true.

Every day, we continue to ignite the passion in our hearts and spark new ideas in our minds
to focus on achieving our goals for the future.

Our mission is to continue to make the world a better place.

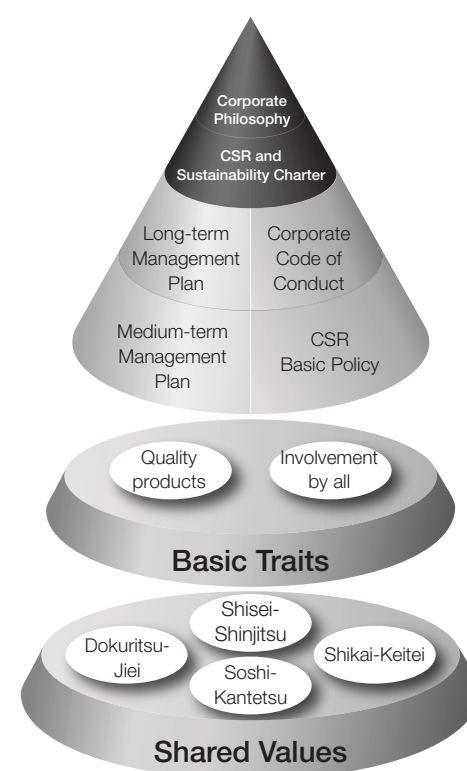
We will pursue future opportunities and improve

NGK SPARK PLUG's unique and advanced technologies.

Our diverse workforce will ignite our company to create new products and
to be a leader in innovation.

We will enhance our competitive advantage by understanding and adapting to global changes.

Fueled and motivated by our own drive, NGK SPARK PLUG will continue to
IGNITE YOUR SPIRIT, instill passion in your hearts, and deliver cutting-edge
solutions as a leading manufacturer in the world.



Shared Values

The Four Shared Values of the Nittoku Way

Shisei-Shinjitsu	Sincerely do our very best.
Dokuritsu-Jiei	Believe in one's own ability, and take actions by oneself.
Shikai-Keitei	Unite efforts with the people of the world, and utilize each other's differences.
Soshi-Kantetsu	Have cherished desires, and carry it through till the end.

The Nittoku Way

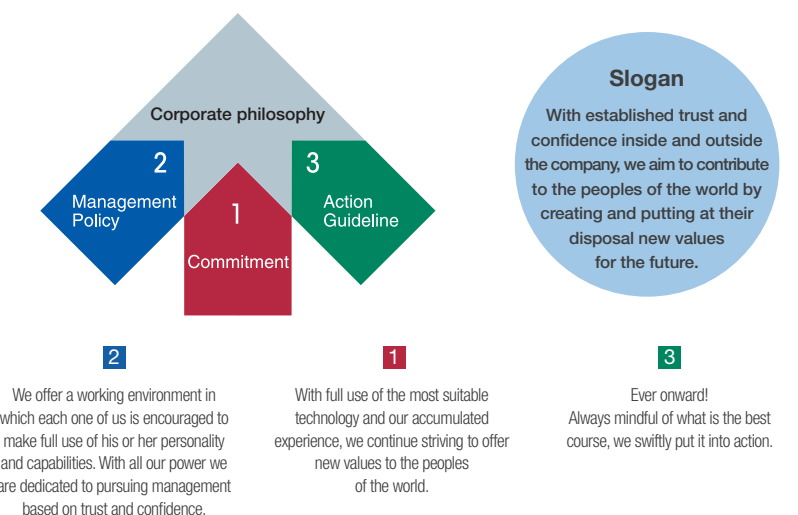
The Nittoku Way refers to a set of philosophies based on business mottos cherished by Morimura Gumi, the founding company of the Morimura Group. The philosophies set forth values to be shared by the entire NGK SPARK PLUG Group and a guide to actions to be taken in line with the values.

□ About the Morimura Group, see ⇒ P.17

Corporate Philosophy

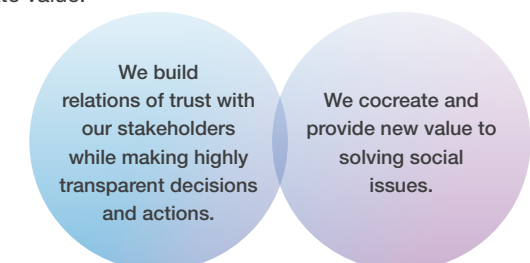
At NGK SPARK PLUG, we aim to contribute to people all over the world by linking people to technologies and delivering new values. As a truly global corporation, we want to build stronger ties not only with customers and communities, but also with the local and global environments. We are always working to make our corporate philosophy and our commitments a reality.

Three elements constitute our corporate philosophy.



CSR and Sustainability Charter

We contribute to developing a sustainable society, thereby improving our corporate value.



We are committed to delivering new value to people all over the world and contributing to society, as expressed in our corporate philosophy. This commitment is associated with our concept of sustainability, which is to help solve social issues through business activities. The CSR and Sustainability Charter presents a summary of this concept.

Pursue Transformation



2040 Vision

Change drastically beyond the current way

Delivering new value in the face of an ever-changing future.

To meet large-scale global environmental changes, we too must change.

Creating an organization comprised of passionate individuals working together to face challenges head-on in order to a better society.

We are transcending imagination with technology that transcends boundaries.

We are more than just a ceramics and we are going in new directions.

X *Beyond ceramics,
eXceeding imagination*

2030 Long-term Management Plan

2030 Strategies and Initiatives

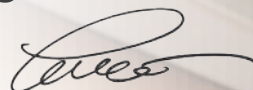


📖 About the new long-term management plan, ⇒ P.37

From Competition to Cocreation

Our goal is to achieve sustainability in both the company's growth and society through unselfish commitments to helping solve social issues

Representative Director
Chairman of the Board



The “NITTOKU SHINKARON,” our long-term management plan that envisioned the next 10 years for NGK SPARK PLUG from FY2010, ended in FY2019. In this section, Chairman of the Board Shinichi Odo talks about how the company evolved during the last decade and how it will adapt to changes brought about by the COVID-19 pandemic.

Impact of “NITTOKU SHINKARON” on the company's culture

The NGK SPARK PLUG Group, established in 1936 with the challenging mission of creating Japan's first spark plugs, has been pursuing the possibilities of ceramics under our principles of “Involvement by all” and “Quality products,” which we believe are the foundation of Monozukuri (innovative and quality manufacturing). Through these efforts over many years, we have contributed to social development and built trust with our customers. Our growth has been centered on the core business of automotive internal combustion engine products, such as spark plugs and sensors, based on our technologies featuring a level of sophistication that no one else can match and against the backdrop of the economic development and spread of motorization in Japan and other nations.

However, the automobile industry, within which we have been continuously challenging and reinventing ourselves in order to establish a competitive advantage, is now at a major turning point with the electrification of automobiles, such as electric vehicles (EVs) and plug-in hybrid vehicles (PHVs). This comes against the background of a movement toward decarbonization and the rapid progress of technological innovation.

The “NITTOKU SHINKARON,” our long-term management plan that illustrated a vision of what the company should be in 10 years, was formulated in 2010 in line with these changes with the aim of returning to our basic principles of Monozukuri put forward at the time of our establishment and reshaping the company's culture by maintaining the good and eliminating the bad. To achieve this aim, I assumed the position of President in 2011 and took charge of business execution, while also encouraging employees, who are major players in the implementation of

the plan, to discuss across the company what they should do as members of the Nittoku family.

In FY2016, ended March 2017, we also developed the seventh medium-term management plan for the period to March 2021. I served as both Chairman of the Board and President from FY2016 to undertake both the management and business execution of the company. However, as I recognized an urgent need for swift decision-making to yield good results amid the rapidly changing external environment, the functions of management and business execution were separated in April 2019, with the former assumed by me as Chairman of the Board and the latter by President Kawai.

With regard to the results of the “NITTOKU SHINKARON” as of 2020, I am not fully satisfied with the achievement level of the goal of offering “Real Value” to all our stakeholders, particularly in terms of the business performance target. However, I feel that we have seen progress in the achievement of the initial objective of the plan—changing the corporate culture.

We have been focusing specifically on strengthening existing businesses, unprofitable businesses and new businesses. As regards existing businesses, we have established an overwhelmingly powerful position in the market of spark plugs, our core product, and achieved the world's highest share for exhaust gas sensors. We have constructed value chains that deliver “Real Value” as a Monozukuri company to our customers the world over. For unprofitable businesses, we have advanced the structural reform of the semiconductor business and completed the consolidation of production bases, resulting in boosted productivity.

However, when it comes to the creation of new businesses, although we sowed seeds for new businesses,



such as founding venture labs and investment in venture capital funds, these efforts did not result in forming and presenting any specific vision for the expansion of our businesses. One reason behind this is that the automotive market, for better or worse, grew more than expected, which meant we had to allocate a larger share of business resources to the automotive components business than to new businesses.

This is something that I feel is a very regrettable result. Nevertheless, we have established ourselves as a Monozukuri company and a highly profitable one at that, both of which were a part of the vision the company sought to achieve by 2020. We also stipulated The Nittoku Way in 2017, which defines the basic principles that need to be observed by every member of the Nittoku family and that are essential for NGK SPARK PLUG to remain a progressive organization with a sound governance system that increases our corporate value and a company that values its employees as precious assets. Because of these and other efforts, in my view, we were able to make some progress in shifting the corporate culture and mindset of employees toward facilitating the creation of new businesses.

To enhance governance and transparency and accelerate business decision-making, the number of directors has been decreased from 25 to no more than 13. The Employee Corporate Officer System has also been adopted to make it possible to actively appoint young employees as officers, and this system, together with the abolishment of senior managing and managing officer positions, is driving forward the elimination of the hierarchy of executive officers. The DIAMOND Project, launched to promote women's empowerment in 2013, has helped increase the number of women in managerial positions from three initially to 18 (as of the end of March 2020). This effort led the company to be granted by the government and the Tokyo Stock Exchange the Nadeshiko Brand designation in FY2018, which recognizes outstanding listed companies in terms of supporting women to play active roles in the workplace.

Shift in management perspective necessitated by the COVID-19 crisis

We have also been actively working on environmental, social and governance (ESG) issues by making it our mission to help solve social issues and achieve a sustainable society. We are developing, in response to social needs, spark plugs, oxygen sensors and other automotive components in compliance with environmental regulations, as well as taking specific actions, such as the reduction of CO₂ emissions to combat climate change, in line with the corporate philosophy and The Nittoku Way, which define how we, as members of the Nittoku family, should behave.

During this term, we have established the Sustainability Promotion Department within the Corporate Strategy Group to promote more comprehensive measures. To strengthen sustainable management, however, I strongly feel that we need a new perspective and approach in light of changes in society and the economic structure, as well as in people's values, brought about by the spread of COVID-19.

We are also implementing a plan to appropriately transfer the authorities and responsibilities of the global headquarters (GHQ) (head office) to the regional headquarters (RHQ) overseas. Under this plan, we have defined key performance indicator criteria that need to be met by—and reinforced the system to monitor the governance of—the RHQ. We are also planning to reorganize the divisions into internal companies under the next long-term management plan. With these plans, the culture of “taking action by oneself” is expected to be further fostered in line with the shared value of Dokuritsu-Jiei set out in The Nittoku Way.

To promote the development of the next generation of global management-class human resources, we launched the HAGI Program in 2016 to identify talent from across all of the Group companies and develop these individuals into future management-class personnel. The program provides such employees with an opportunity to receive training and be eligible for promotion regardless of nationality and is already beginning to produce workers who are filling core positions with a strong sense of mission and great enthusiasm to serve the Group. We have also opened the Nittoku Business School for selected personnel in section chief-class positions, which are slightly below the level qualified to join the HAGI Program. The school provides education designed to lay a leadership foundation and is beginning to send forth leaders to supervise worksites.

President Kawai and I have also divided up the task of human resources development, with President Kawai taking charge of the Nittoku Business School and myself taking charge of the HAGI Program and women's empowerment. In terms of company management, President Kawai executes all everyday management operations as the chief executive, and the two of us exchange opinions whenever there is any issue that I want to raise as Chairman of the Board or when he consults me regarding any issue, in order to ensure that the company is managed in a timely and appropriate manner.

Looking back at our history, since its founding the company has undertaken many challenges and undergone many changes to help solve social issues. Carrying on this spirit and continuing to create products and services that will contribute to various social issues is our mission. Turning our eyes to the rest of the world, while we are now seeing each nation setting their own targets to achieve the Sustainable Development Goals (SDGs) and taking action accordingly, the COVID-19 crisis and unprecedented climate change are posing a question as to how we can strike a balance between capitalism and social responsibility—a question that represents an extremely high hurdle for everyone, including, to my regret, me.

Needless to say, companies must keep increasing sales and profits for sustainable growth. The question of how to balance corporate growth and social commitment, which too often ends up a trade-off, is not easy to answer. However, the

age in which expansion was the only goal of business operators and the winning-is-everything mentality prevailed has gone, and we are now at a turning point where we can change our approach to corporate management.

I once had a discussion with employees at the Nittoku Business School regarding what our company can do for society at a time when we have to coexist with COVID-19. While the employees were proposing various business plans, one thing I suggested to them was that, as the richest top 5% of people own more than 80% of global wealth, there is a

Addressing social issues by transforming ourselves, rather than through mere reforms

Management of ESG risks is also facing a turning point. Companies, especially manufacturers, were previously focusing on cost reduction and efficiency and consolidating their factories. However, some companies concentrating their factories in Wuhan, China, were hit hard by the outbreak of COVID-19 as their supply chains were cut off. Our damage was fortunately minimal, but the result would have been very different if our production bases in China were located in places seriously affected by the virus.

It has long been pointed out for the dispersion of risks that there is a trade-off between security and costs. But this trade-off can be solved if digital transformation (DX)—which entails changes in production, such as remote control and production management in the cloud—progresses and leads to reduced costs and labor. In Japan, the delay in digitization, particularly at production sites, has been cited as an issue. Our company will promote DX as one of the targets of the “NITTOKU BX” to speed up management decision-making. However, what we really need to ensure business continuity is not stopgap reforms, which would not help us survive the current critical situation confronting us. We must transform ourselves radically and in a manner that can overturn traditional norms.

We are seeing values shift, with less emphasis on generating profit for the company and more emphasis on

need to think of the remaining 95% of the population when planning new businesses. We are aiming to expand business in the area of medical care as part of the next 2030 Long-Term Management Plan “NITTOKU BX”, but even if we can create advanced medical technologies, they will be meaningless unless they are easily accessible to people around the world. I hope that discussions of this kind will help employees develop into management-class personnel capable of finding optimum solutions.

adopting an altruistic stance. Japanese automakers have been expanding their market and have become some of the world's most successful companies, but to maintain their sustainable growth, contribute to solving social issues and increase productivity, they also should consider the need for the transformation of their supply chains across the entire industry. We are now entering an age when we need to shift our focus from competition to cocreation in our challenge to help build a sustainable society.

The process of drastic transformation, needless to say, will require dogged determination and may be even accompanied by pain. But I believe that this process is indispensable for passing on the Monozukuri technologies and artisanship that Japan is so proud of to future generations.

Moving forward, as expectations mount for our even more environmentally considerate, efficient and high-performance spark plugs and sensors created based on our proud ceramics technologies, we at NGK SPARK PLUG will continue cultivating new businesses with a view to the popularization of EVs. We will share and cocreate a better future with shareholders and all other stakeholders and take on wide-ranging challenges to tackle social issues. I would appreciate your understanding toward a new NGK SPARK PLUG along with your continued support.





Constantly looking to “Something New” to

build a strong, agile and flexible organization that can
“change drastically beyond the
current way”

Representative Director President
Chief Operating Officer

In FY2020, as a new long-term management plan that follows on from the “NITTOKU SHINKARON”, NGK SPARK PLUG has formulated the 2030 Long-term Management Plan “NITTOKU BX”. Under this plan, made by backcasting from its 2040 vision, what does the company aim to achieve by FY2030 on the way to making unprecedentedly drastic changes? President Takeshi Kawai talks about the strategies and measures.

Generating innovation out of conflict

Over its history of more than 80 years, NGK SPARK PLUG has built a stable revenue base by building on the company's core ceramics technology to tirelessly advance and improve its products used in internal combustion engines (ICEs), mainly spark plugs and sensors. However, due to the rapid progress of technological innovation, as represented by EVs, the economic and industrial structures themselves are undergoing huge changes, necessitating that we too make dramatic progress and reinvent ourselves to move to a new stage.

The automobile industry is going through a once-in-a-century shift, and in response we need to remind ourselves of our company's founding spirit, “Challenges and Transformations” toward the solution of social issues, while constantly looking to “Something New” as our new mindset.

There are no right answers to what “Something New” means. But one thing is clear: We cannot find “Something New” if we continue to do business in a conventional manner. For the past one year, I have been working to build a corporate culture that encourages employees to think what “Something New” means to them in a proactive manner and not based on the technologies already accumulated by the company and available to them.

One example of the measures that I have been leading to this end is the employment and utilization of a more diverse workforce. In order to foster innovation, it is necessary to follow a process in which people with various backgrounds

gather together and exchange opinions from different viewpoints. This fiscal year, we established the Global Innovation Div. as a team tasked with searching for seeds for new businesses and a non-Japanese engineer was appointed to head up this division. This marked the first appointment of a foreign national to lead a head office division in the long history of the company.

Diversifying an organization will inevitably spur conflicts among its members, and this is exactly what I have intended. If we were going to continue to do business in a conventional way, we would need to foster teamwork and harmony, but in order to find “Something New” from new viewpoints, we need to be skeptical of conventional wisdom and frankly express opinions that may go against it.

I have thus proposed that employees find “Something New” (for which, as mentioned above, there is no right answer) as a key phrase for our business model and have inspired them by adding diversity to the workforce. As a result, existing employees are gradually showing signs of change in terms of their mindsets, words and behaviors. By tending the sprouts of “Something New” until they develop larger and thicker trunks, we can build a new business pillar through which we can also contribute to the solution of social issues. Beyond attaining this target, we will be able to become a corporate group that can make steady contributions to future development.

Commitment to be fulfilled by going “Beyond ceramics”

For the creation of new businesses that support the future of our company, we formulated the 2030 Long-term

Management Plan “NITTOKU BX” (hereinafter, “NITTOKU BX”) as a roadmap that shows the specific details of

measures to be taken to attain the goal. The plan targets 2030 as the milestone year toward 2040.

First, under the plan, we aim to “change drastically beyond the current way” as our vision for 2040 and uphold the slogan “Beyond ceramics, eXceeding imagination” as a result of a series of discussions by six teams made up of young employees, mostly aged in their 30s.

It is impossible for anyone to precisely predict the future 20 years from now. However, according to the forecasts for sales volume of new automobiles and the numbers of automobiles owned by people around the world, the number of those equipped with ICEs, in which our core products such as spark plugs and sensors are used, will peak in the middle of the 2030s and then begin to decrease.

In response, what measures do we need to implement? It would be too late to make a new growth plan after demand has peaked in the 2030s. Therefore, right now, we need to

Aiming to transform our business portfolio

As the specific target for 2040, we will invest the earnings from the automotive components business, which is expected to remain steadily profitable, in new and growth businesses, aiming to increase the proportion of non-ICE business in our total net sales from the current 20% to 60%, thereby transforming our business portfolio. To this end, under “NITTOKU BX,” which targets 2030 as the milestone year in the lead-up to 2040, we will decrease the proportion of ICE-related businesses to 60% and increase that of non-ICE-related businesses to 40%.

For the creation of new businesses, which was also upheld in the previous long-term management plan, “NITTOKU SHINKARON,” we clearly show in “NITTOKU BX,” as an important point of the plan, the numerical targets for the proportion of new and growth businesses in the total amount of investments that we will make in our businesses, in addition to the numerical targets set for their share of total net sales. We will announce how much we have invested in

Introducing an in-house company system that embodies “Dokuritsu Jiei”

Along with the public announcement of the amount of investment that we have made in each of our new businesses and the investment results, we will foster the following three to promote the transformation of our business portfolio with speed: Management Innovation, Clarification of Responsibilities and Authority, and Willful Cultural Change.

For Management Innovation, we will build a small, strong and agile head office and speed up investments in cloud systems and digitization, thereby expediting management decisions. We will also foster digitization to save labor and

make a plan for 2040—even though we do not know what the right plan for the future of 20 years from now is—and we have thus decided to “change drastically beyond the current way” as our vision for 2040.

We used to develop a new business by thinking about “What ceramics can do” or what we can do by using our existing core technology.

However, in order to “change drastically beyond the current way,” we need to embrace the challenge of developing solutions and services with technology that transcends boundaries. While continuing to center our business on ceramics, we must expand by gradually breaking the hard mold and forge the future by transcending imagination. In “NITTOKU BX,” we therefore take the approach of backcasting from our 2040 vision and show what kind of preparations we will make and what things we will try during the next decade to 2030.

new businesses from current income and the investment results in our quarterly financial reports and will invite feedback, even reprimands, from our shareholders.

In order to secure a source of funding to make investments in new businesses, we absolutely need to make profit in the ICE-related businesses, which provides us with a revenue base. Some are worried about the impact of COVID-19, but its impact on our business performance is relatively small. Demand for repair parts has recovered faster than expected, and global demand for our spark plugs and sensors will continue for at least the next 10 years.

As for the emergence of EVs, demand for high-performance hybrid vehicles, which are more eco-friendly, might further increase, depending upon the progress made in the development of batteries. Demand for eco-friendly products, for which we have a technological advantage, will continue as environmental regulations are becoming stricter in developing and emerging economies alike.

cost at our administrative departments, such as those in charge of general affairs, personnel affairs and accounting, including the introduction of the concept of “shared service” to the back office departments.

For Clarification of Responsibilities and Authority, we will implement measures to transform our organizations into those that embody “Dokuritsu Jiei” as upheld in the Nittoku Way, including the introduction of an in-house company system.

We will set KPIs and KGIs in the medium-term



management plan made for each in-house company based on the long-term management plan. The in-house companies will also adopt performance-based rewards and evaluation systems in consideration of their respective level of achievement and business environment, thereby securing excellent human resources. Further, we will mandate each in-house company to make quarterly performance reports to ensure the transparency of management while building a system for the in-house companies to monitor each other in

terms of their achievement, cost and budgeting, and enhancing their governance.

For Willful Cultural Change, we must reform our corporate culture from a “defensive” to an “offensive” culture to “change drastically beyond the current way.” To this end we need to promote diversity and have upheld “Change with Will” as a new guiding principle. Specifically, with a strong commitment (“Will”), we must foster “Change” for coexistence with society and people.

Transforming the “conservative” corporate culture into one with a “progressive spirit”

In our transformation process, we will reform our organizations for the first four years under the new long-term management plan, upholding the slogans, “Break to change” and “Change to create.” Needless to say, we cannot avoid failure when taking on challenges, but in the transformation process we cannot go back to the conventional business model even if we do encounter failure, and so we must “Break to change.”

In order to shift from “Break to change” to “Change to create,” we must embrace challenges boldly and have new experiences during the remaining one year under the seventh medium-term management plan and the first four years under the next medium-term plan. By engaging in trial and error to make new findings at this stage in the transformation process, we can take another step forward to move to the next stage, or the next five years, for which we have upheld the slogan, “Extend for the future. Spread out to exceed.” By engaging in trial and error at these two stages, we will create a new business culture to ensure the sustainability of our company going forward.

As the most important point to be noted for our sustainable growth, we are required to give consideration to ESG and the SDGs, face social issues squarely, and take on

the challenge of solving these issues as our basic corporate attitude. In this world of uncertainty about the future, we need to build up a flexible and robust system in order to respond to changes and work to solve social issues. To this end, we should immediately embark on a reform, and I will play a leading role in helping the company to fulfill this mission.

We cannot ensure our business continuity without the sustainable development of society. Accordingly, in order to contribute to the creation of a sustainable society, we signed the United Nations Global Compact in November 2016, supporting its 10 principles set in four areas. Going forward, we will conduct a range of activities as a good corporate citizen, thereby contributing to society at large under our corporate philosophy, expressed in our slogan, “With established trust and confidence inside and outside the company, we aim to contribute to the peoples of the world by creating and putting at their disposal new values for the future.”

I hope that our stakeholders will pay close attention to how we implement our new long-term management plan “NITTOKU BX” and look forward to receiving your feedback, including advice and opinions.



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Morimura Group

The origins of NGK SPARK PLUG can be traced back to Morimura Gumi, which was founded by two brothers, Ichizaemon and Toyo Morimura, in 1876 and built a foundation of business that later grew into the world's largest ceramics conglomerate. The brothers' sincere attitudes toward business have formed the basis of our corporate DNA, passed down over 140 years to this day.

Morimura Group



Ichizaemon Morimura(Right side) and Toyo in 1889

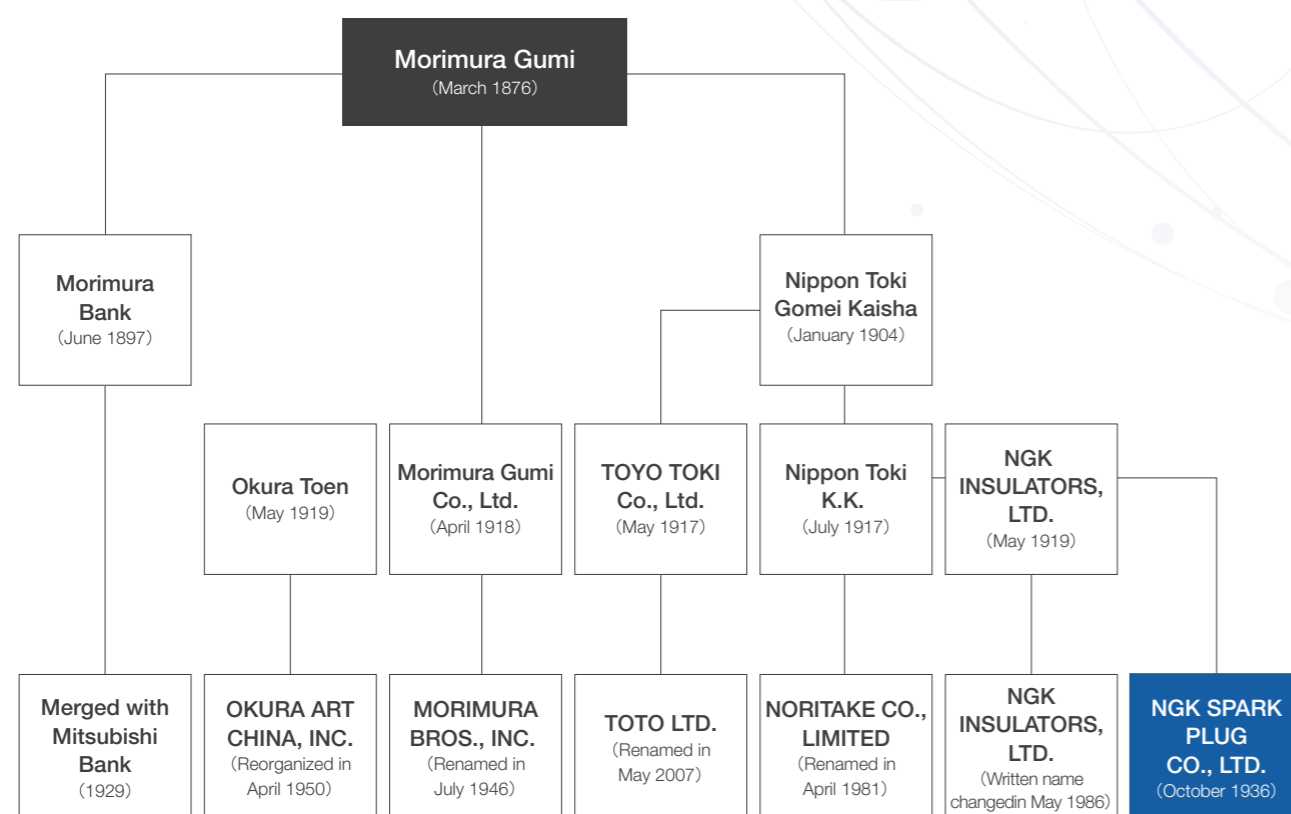
The origin of the Morimura Group, the foremost ceramics conglomerate in Japan, dates back to 1876, when the Morimura brothers, Ichizaemon and Toyo, founded Morimura Gumi*¹ to launch a pioneering foreign trade business in the country.

The Group's involvement in the ceramics industry began in 1904, when the founders of Morimura Gumi formed Nippon Toki Gomei Kaisha*², from which the sanitary ware division and insulator division were subsequently spun off into TOYO TOKI Co., Ltd.*³ (1917), NGK INSULATORS, LTD.*⁴ (1919) and Okura Toen*⁵ (1919), respectively.

After that, in October 1936, the spark plug division of NGK INSULATORS, LTD. was spun off, and NGK SPARK PLUG was established, forming the foundation of the Morimura Group today.

Notes: 1. Currently, Morimura BROS., INC.; 2. Later, Nippon Toki K.K., and currently, NORITAKE CO., LIMITED; 3. Currently, TOTO LTD.; 4. Currently, NGK INSULATORS, LTD.; 5. Currently, OKURA ART CHINA, INC.;

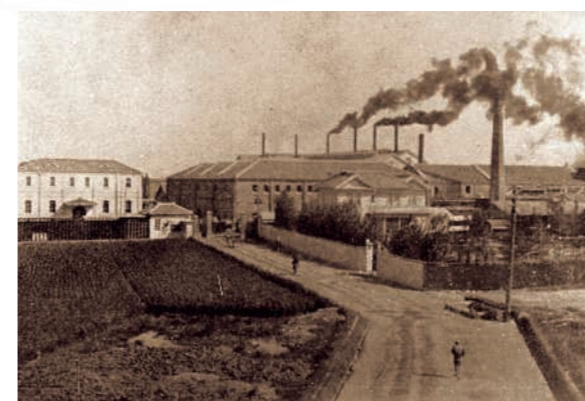
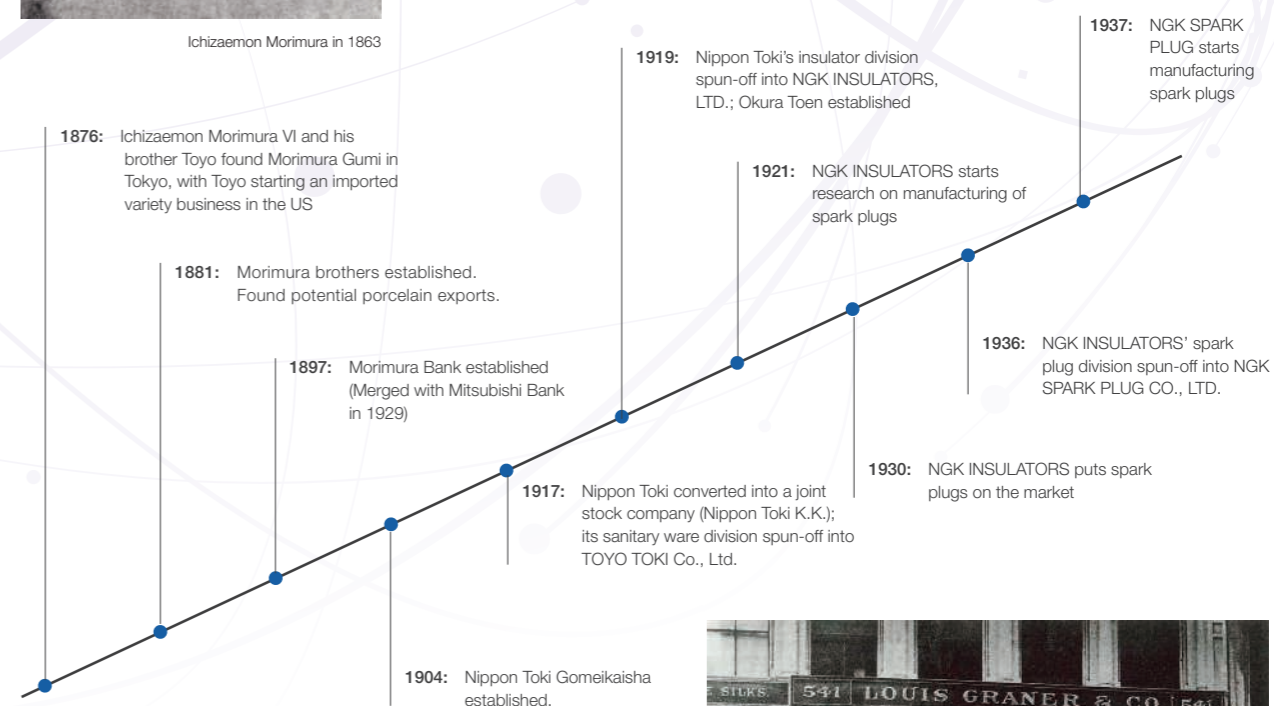
Morimura Group's Background



Timeline from Morimura Gumi to NGK SPARK PLUG



Ichizaemon Morimura in 1863



Nippon Toki Gomeikaisha in 1904



In New York, Morimura Brothers Broadway 539, around 1893



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Stories for Value Creation

Since its founding in 1936, NGK SPARK PLUG has been exploring the possibilities of ceramics and demonstrating a commitment to its basic policy of “quality products” and “involvement by all” as a manufacturer, while also contributing to the development of society and earning trust from customers.

This tradition of pursuing challenges and trust has been and will continue to be the driving force pushing us toward new frontiers. We will enhance our activities to be able to achieve the sustainable development of society and our business alike.

History of Challenges and Transformations

Over the course of its history, NGK SPARK PLUG has made progress in response to the changing times, taking on the challenge of solving social issues. Demonstrating a commitment to quality, our corporate DNA inherited from Morimura Gumi, we are continuously working to meet the challenge of creating new value.

1936

NGK SPARK PLUG founded

NGK SPARK PLUG was established through the spin-off of the spark plug division of NGK INSULATORS. The founding business of producing spark plugs has grown to make the company the world's top manufacturer of the product.



Magoemon Ezoe, first president

1937

Production of NGK Spark Plugs started

In 1930, we released NG Spark Plugs, Japan's first domestically produced spark plug, and began producing NGK Spark Plugs in 1937.

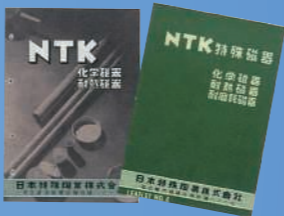


NGK Spark Plug

1949

Production of NTK Technical Ceramics started

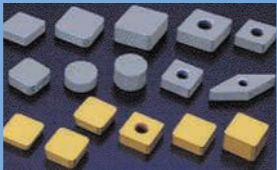
After the post-war confusion had settled down and spark plug production was stabilized, we began applying ceramics to develop new technologies and products for the diversification of our business. The new segment development was promoted under the brand name of NTK. Following this, we gradually broadened our ceramic product range to include those for industrial and environmental uses.



1958

Ceramic cutting tools developed

The importance of ceramic industrial tools increased, particularly in relation to electricity, automobiles, chemical engineering and machinery, and we developed ceramic cutting tools for cutting hard materials to be put on sale in 1958.



Cutting tools

1959

Overseas business expansion

Japan entered the high economic growth period, boosting exports. Driven by this trend, we established our first overseas base in Brazil, Ceramica e Velas de Ignicao NGK do Brasil, in 1959, and began to promote overseas advancement ahead of competitors to build strong global networks.

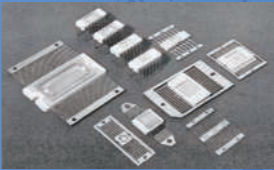


Ceramica e Velas de Ignicao NGK do Brasil

1967

Production of ceramic substrates and IC packages started

In the late 1960s, the silicon semiconductor integrated circuit (IC) became a mainstream standard and its mass production began in Japan and the US. Following this trend, we started manufacturing ceramic substrates and IC packages by applying our ceramics technologies.

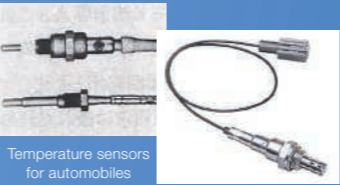


IC packages

1982

Production of oxygen sensors for automobiles started

In Japan in the 1960s, as the full-scale motorization of society progressed, environmental degradation such as air pollution became a social issue. In response, exhaust gas regulations were made stricter. To help related industries ensure regulatory compliance, we began developing various sensors, primarily in association with exhaust gas, such as zirconia oxygen sensors and wide-range oxygen sensors.



Temperature sensors for automobiles

Oxygen sensors for automobiles

1989

Sales of electrostatic chucks started

In the late 1980s, requirements for higher integration and lower cost of semiconductor elements intensified, which gave rise to a shift to ceramic components, characterized by the material's excellent heat and abrasion resistance, to be used for semiconductor production equipment. In response, we promptly introduced ceramic electrostatic chucks, and commenced mass production of the product in the 2000s to expand sales.



Electrostatic chuck

1999

Sales of medical oxygen concentrators started

We started research on the possibility of medical applications of bioceramics in the 1970s, looking to future opportunities afforded by the progress of population aging. Related results included the rollout of the bone prosthesis Ceratite in 1990 and oxygen concentrators for medical use in 1999.



Medical-use oxygen concentrator

2000-

Building new business pillars

Under the NITTOKU SHINKARON long-term management plan started in FY2010, we accelerated efforts to establish new business pillars, including hydrogen leak detection sensors and the solid oxide fuel cell (SOFC), by applying our core ceramics technologies. We continue with these challenging efforts, seeking out every possible new field.



Hydrogen leak detection sensor



Solid oxide fuel cell (SOFC)

Startup period (from 1930)

Domestic automobile industry depending on imports

In Japan in the 1920s, when the domestic automobile industry was still in its infancy, the supply of automobiles was limited almost entirely to imports from the U.S. and Europe, and automotive parts, including spark plugs, were also imported. The first president, Magoemon Ezoe, decided to produce plugs using ceramics, a specialty product of Japan, and led initiatives to launch domestic plug manufacturing.

Growth period (from 1940)

Automobile production growing rapidly

In the 1940s, domestic automobile production rose to 46,000 cars, as automobile and related parts manufacturing developed into a major industry. Accordingly, demand for plugs also increased. After WWII, Japan ushered in a period of high economic growth in the late 1950s, when the country was rapidly becoming motorized.

Establishment period (from 1960)

Impact of high economic growth

From the late 1960s, pollution problems were emerging as a negative effect of the high economic growth, and the automobile industry was particularly called on to urgently address air pollution problems. Looking to fulfill needs related to such problems as well as resource conservation, we started research to develop new products that would help meet exhaust gas regulations. These regulations were made more stringent by the year, pushing up demand for high-performance plugs and sensors.

Development period (from 1990)

Tackling new social challenges

From the 1990s, automakers began to focus on the development of electric vehicles, hybrid vehicles and fuel cell vehicles, as part of efforts to address environmental and energy issues. Those years also saw the explosive growth of information communication technologies bringing about significant changes in many people's lifestyle. In order to provide products that would meet new needs related to these societal trends, we promoted research and development based on our technologies built over long years.

From present to future

Development period (from 1990) Aiming to create a sustainable society

Our business environment is undergoing an enormous change brought about by a number of factors, such as AI and IoT-driven digitization, the once-in-a-century transformation of the automobile industry led by the concepts of CASE and MaaS, and mounting concerns over climate change and ESG-related issues. Recognizing this situation, we are striving to reduce our dependence on the production of automotive components for internal combustion engines, which account for 80% of our net sales, while creating new business projects aimed at achieving a sustainable society.

Value Creation Process

External environment

- Global environmental issues
- international issues
- Established of a society where economic development and resolution of social issues are compatible

About risks and opportunities related to external environment, see ⇒ P.37

Business issues

- Reform of the automobile industry
- Next-generation energy
- Expanding demand for semiconductors
- Aged society and extending healthy life expectancy

Capitalizing on Ceramics Technologies Business Model

Managerial resources

FY2019

Refer to "Assets Built over the Years" on ⇒ P.29



Financial capital

Cash flows from operating activities

59.8 billion yen



Manufacturing capital

Capital expenditures

51.0 billion yen

Number of production bases: 4 (NGK SPARK PLUG plants); 13 (subsidiaries in Japan); 21 (subsidiaries outside Japan)



Intellectual capital

R&D expenses

28.3 billion yen



Human capital

Number of employees 16,430 people

Rate of overseas employees 44.9%



Social capital

Overseas sales ratio

85.5%

Value chain to

gain competitive advantage

Planning and R&D

Procurement

Production and quality management

Logistics and sales

Automotive Components Group

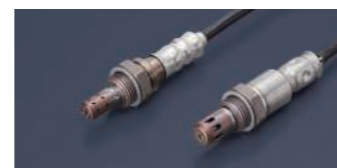
Supporting global motorization, our product lineup is mainly composed of plugs, sensors and other components for internal combustion engines.



Spark plugs



Glow plugs

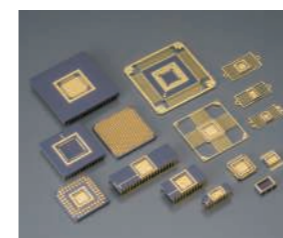


Sensors

Technical Ceramics Group

Semiconductor business

Our semiconductor packages and substrates, developed by applying our ceramics layering techniques, are adopted in various products, such as communication equipment and smart devices.



Semiconductor IC packages

Ceramics business

We supply a range of ceramic products for industry use, including cutting tools and components for semiconductor production equipment, which have been developed so as to make useful properties of the material available.



Cutting tools



Components for semiconductor



Ceramic products for industrial use

Seventh medium-term management plan

"Evolution" to "Real Value"
Accelerating current & new businesses

Growth strategies

We aim to deliver "Real Value" to all stakeholders in 2020.



About Corporate Philosophy & The Nittoku Way

See ⇒ P.04

About Priority issues to be addressed in relation to ESG

See ⇒ P.55

About Corporate Governance

See ⇒ P.68

Creation of corporate value

FY2019

Net sales

426.0 billion yen

Operating income

48.4 billion yen

Operating income ratio

11.4%

ROIC

6.2%

Dividend payout ratio

42.9%

Annual sales volume of spark plugs

About 850 million units

Value provided to society

Contribution to environmental issues

- Cleaner automotive exhaust gas
 - Higher fuel economy
- Contribution for a hydrogen energy-based society
- Reduction of environmental pollutants

Improvement of information infrastructure

- Higher performance of electronic devices
- Reduction of lead time at manufacturing facilities
- Effective use of equipment

Higher safety

- Safety in automobile driving

Development of medical technologies

- Higher QOL
- Safety in surgical operations

Refer to "Priority Business Areas" on ⇒ P.39

Refer to "Business Strategy" on ⇒ P.89

Businesses Developed over the Years

The 80-year history of NGK SPARK PLUG started with the production of plugs. Then, applying its core ceramics technologies, the company developed a number of businesses, which are currently organized into two major segments: the Automotive Components Group and the Technical Ceramics Group. We are also putting all our efforts in building new business projects.

Automotive Components Group

Revenue

348.7 billion yen

Plugs

Spark plug

In an internal combustion engine, acts as a "lighter" to ignite the mixture of gasoline and air.



Sensors

Zirconia oxygen sensor

Used to measure the exhaust gas oxygen concentration for air-fuel ratio control.



Wide-range oxygen sensor

Paired with a dedicated interface, used for wide-range air-fuel ratio control to maximize output according to the exhaust gas oxygen concentration level.



Glow plug

Assists with the startup of a diesel engine.



NOx sensor

Used to precisely measure the concentration of NOx gas, a regulated substance, to ensure compliance with the NOx regulations, which have recently been tightened. Can be used to concurrently measure the concentration of oxygen.



Temperature sensor

Used to monitor the exhaust gas temperature for the protection of exhaust system components and for the optimal control of the exhaust gas aftertreatment system, thereby contributing to cleaner exhaust gas and higher fuel efficiency.



Operating income ratio

14.8%

81.8%

Revenue

52.2 billion yen

12.3%

Operating income ratio

-0.9%

Components for semiconductor production equipment

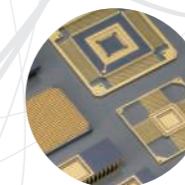
Electro-static chucks

We offer electrostatic chucks, an indispensable item for semiconductor manufacturing, by making use of the electrostatic property of ceramics.



Semiconductor packages and substrates

We offer IC packages suitable for electronic and smart devices as well as substrates used in probe cards for semiconductor wafer inspection.



Ceramic products for industrial use

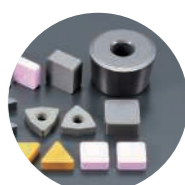
Piezoelectric ceramic components

Ceramics generate electricity when force is applied to them, while expanding/contracting when voltage is applied. By making use of this property, we manufacture and supply piezoelectric elements for use in sounders and fluid sensors.



Cutting tools

Indispensable for the processing of automotive, industrial, aircraft and other components. We offer a wide lineup of products, including ceramic tools and those made of new materials.



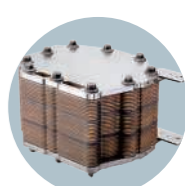
Medical products

By making use of our ceramic materials, we manufacture medical products, such as bone prostheses and oxygen concentrators for medical use.



Solid Oxide Fuel Cell (SOFC)

Generates electricity and heat through electrochemical reaction. We are developing an SOFC stack for power generation. SOFCs are highly energy efficient fuel cells and are expected to be downsized and provided at lower cost.



Others

Assets Built over the Years

While pursuing challenges and undergoing transformations, NGK SPARK PLUG has built up both financial and non-financial assets. Of particular note, our capital grew remarkably during the 10 years ended March 2020 under the “NITTOKU SHINKARON” long-term management plan. We will work to bolster this capital through continuing business while investing it to create new possibilities for future growth.



Financial capital

Cash flows from operating activities

34.3 billion yen



Manufacturing capital

Capital expenditures

11.0 billion yen

Production bases

4 (NGK SPARK PLUG plants); 9 (subsidiaries in Japan);
16 (subsidiaries outside Japan)



Intellectual capital

R&D expenses

13.9 billion yen



Human capital

Number of employees

11,795 people

Ratio of overseas employees

30.8%



Social capital

Overseas sales ratio

78.1%

FY2009

(J-GAAP)



Financial capital

Cash flows from operating activities

59.8 billion yen

To ensure sustainable growth and increase corporate value, ongoing capital investment and R&D is indispensable. We have boosted the capacity to generate cash from operating activities, a source of investment funds for further business growth.



Manufacturing capital

Capital expenditures

51.0 billion yen

Production bases

4 (NGK SPARK PLUG plants); 13 (subsidiaries in Japan);
21 (subsidiaries outside Japan)

Anticipating an increase in sales of the automotive components, we have massively expanded capital expenditures. Major investments were made in the increased number of production bases in and outside of Japan to build structures enabling a timely response to customer needs.



Intellectual capital

R&D expenses

28.3 billion yen

R&D expenses have increased as we made upfront investments in R&D projects, seeking to reform our business portfolio. Investments have been diversified in different projects targeting commercialization in relation to element technologies, new materials and process technologies, among others.



Human capital

Number of employees

16,430

Ratio of overseas employees

44.9%

We have increased the number of employees in accordance with our business expansion. The rate of overseas employees has risen notably as we set up more bases outside of Japan and implemented international M&A projects.



Social capital

Overseas sales ratio

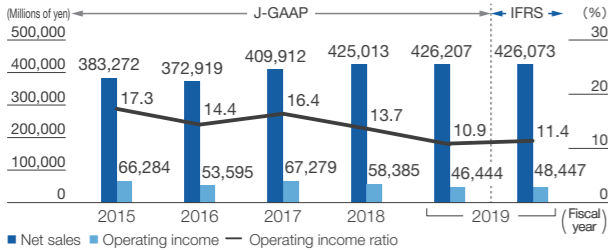
85.5%

The overseas sales ratio has increased as a result of expanded sales of plugs and sensors to overseas markets, mainly in China and other emerging economies that have enjoyed steady growth and in developed economies facing tightened fuel efficiency requirements and environmental regulations.

Performance Data

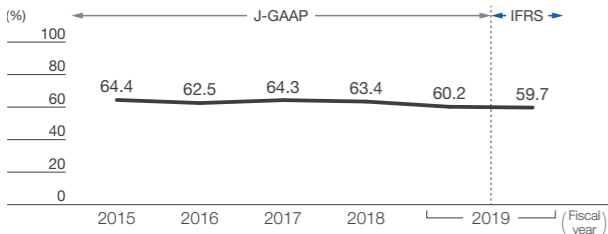
Financial Highlights

Net sales/Operating income/Operating income ratio



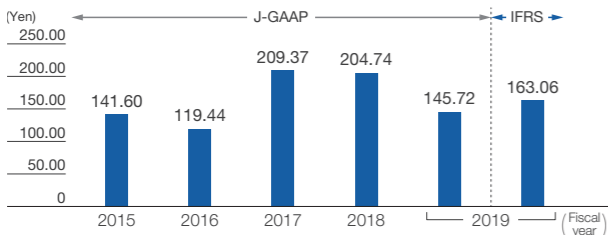
We recorded an increase in revenue due to increased sales of automotive exhaust gas sensors but recorded a decline in profits, influenced by the suspension of automakers' operations caused by the spread of the novel coronavirus.

Equity ratio attributable to owners of the parent



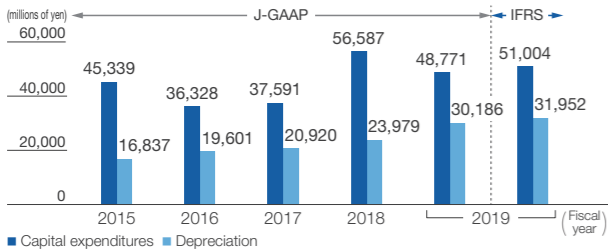
Equity ratio attributable to owners of the parent decreased year on year as tangible fixed assets increased through capital investment made to enhance existing businesses and create new businesses and also because of borrowing and retirement of treasury stock.

Earnings per share



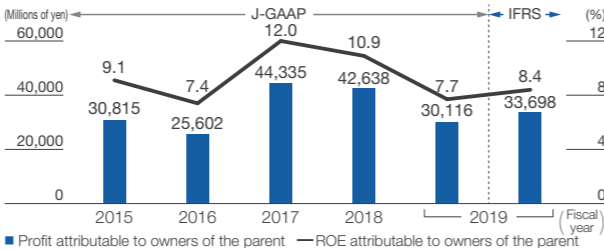
Earnings per share decreased year on year due to a decrease in the profit attributable to owners of the parent.

Capital expenditures/depreciation



Capital expenditures for the past five years have totaled 200 billion yen in anticipation of increased sales of the automobile components business. Depreciation has increased over this period accordingly.

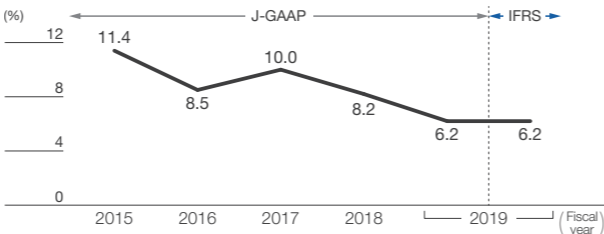
Profit/return on equity (ROE) attributable to owners of the parent



ROE decreased by 2.5% year on year due to a decrease in the profit attributable to owners of the parent.

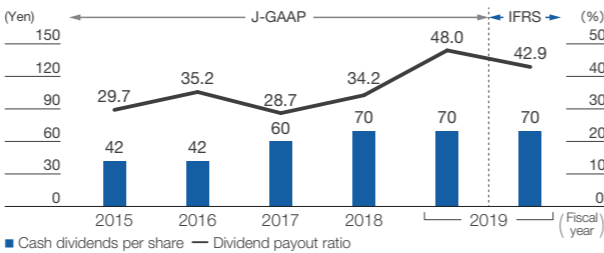
Return on invested capital (ROIC)

ROIC: Operating income after tax/Invested capital



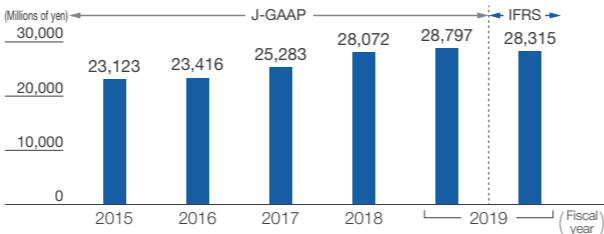
We have adopted ROIC as a management indicator since April 2016 and set our goal in FY2020 at 13%. In FY2019, ROIC decreased by 2.0% year on year due to a decrease in operating income.

Cash dividends per share/Dividend payout ratio



We are aiming at providing stable dividends, with the goal of a payout ratio of 30% or more. In FY2019, the interim cash dividend was 35 yen per share and the year-end cash dividend was 35 yen per share; therefore, the full-year cash dividend was 70 yen per share. The payout ratio came to 42.9%.

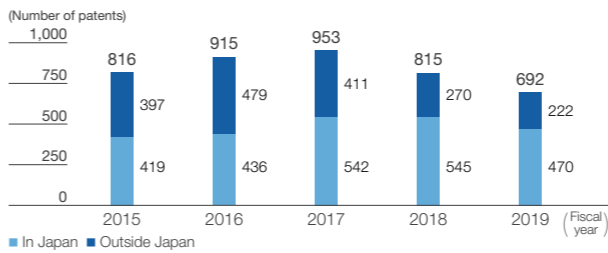
R&D expenses



Our ratio of R&D expenses to sales had traditionally been approximately 5% to 6%. It reached 6.6% in FY2019.

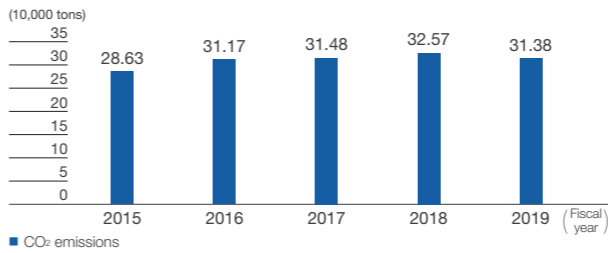
Non-financial Highlights

Number of new patents published



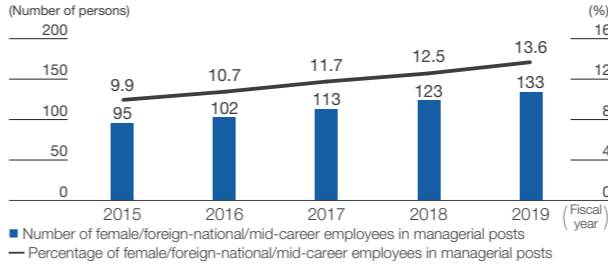
The number of patents published in Japan has slightly decreased as a result that we adjusted the number of patent applications filed in Japan. Since patents filed outside Japan are published sequentially, the number of patents published outside Japan stayed at a specific level.

CO₂ emissions



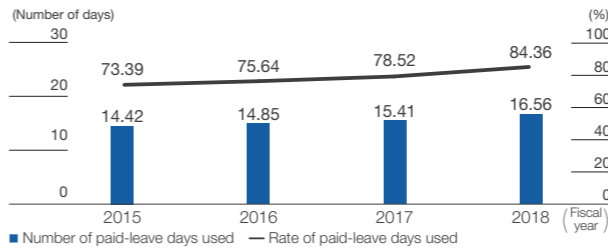
As a goal of one of our Priority Issues, Responding to Climate Change, we are striving to reduce greenhouse gas emissions, a factor contributing to climate change. We aim at reducing CO₂ emissions by 30% by FY2030 from the FY2018 level.

Percentage of female/foreign-national/mid-career employees in managerial posts (non-consolidated)



As a goal of one of our Priority Issues, Global Human Resource Management, we are promoting the diversity of management personnel, raising the percentage of women, foreign nationals and mid-career employees in managerial posts. We have set a target of increasing the percentage to 25%.

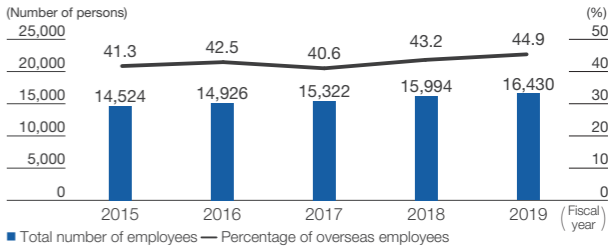
Number of paid-leave days used (non-consolidated)



*Fiscal year starts October.

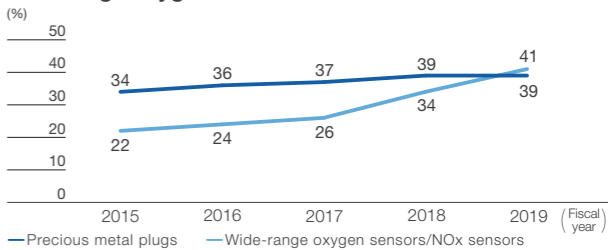
The management and labor cooperate in encouraging use of paid leave, and the number of paid-leave days used is increasing, as a result. The total annual number for FY 2018 averages 19.63 days per person.

Number of employees at work/percentage of overseas employees



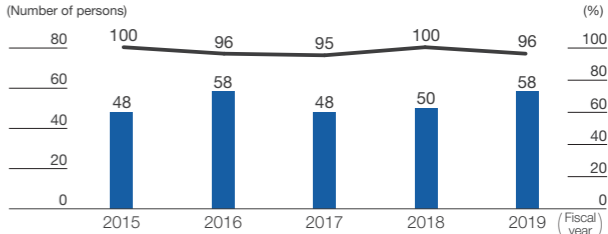
Against the background of M&As in and outside Japan, etc., the consolidated number of employees tended to increase.

Sales percentage of precious metal plugs and wide-range oxygen sensors/NOx sensors



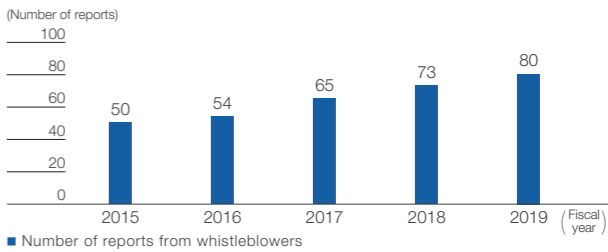
We have specified these items as environmentally friendly products in line with one of our Priority Issues, Providing Environmentally Friendly Products. We aim to raise the sales percentage of each category to at least 50% of the total.

Number of employees who took childcare leave; percentage of employees who returned to work after taking childcare leave (non-consolidated)



A total of about 50 employees, male and female employees combined, take childcare leave every year. The return-to-work rate has remained consistently high over the years.

Number of reports from whistleblowers



We are promoting the Corporate Ethics Helpline, an internal reporting system, on an ongoing basis, mainly by holding seminars, creating posters and distributing pocket-size cards. As a result, the number of reports received has been on the rise.



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- New Long-term Management Plan**
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Growth Strategies

NGK SPARK PLUG formulated its long-term management plan “NITTOKU SHINKARON” in FY2010 and subsequently worked to achieve “Our Ideal Image in the Year 2020.” Having reached the year 2020, we have now formulated the 2030 Long-term Management Plan “NITTOKU BX” as our new long-term management plan for 2030, which we regard as a milestone year for our growth over the next 20 years.

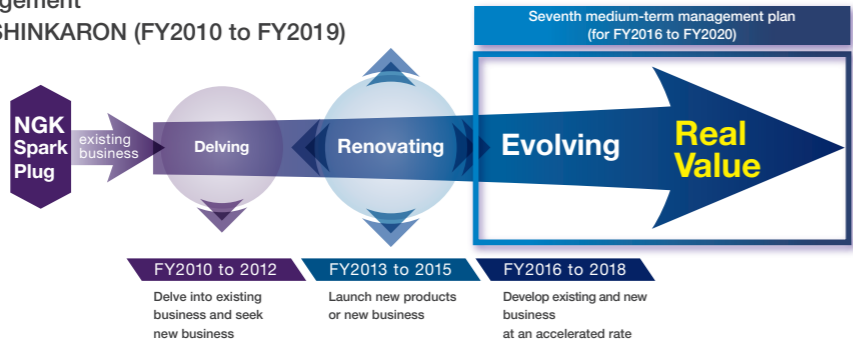
We will implement new strategies under this new plan, while at the same time looking back over the past 10 years to identify and solve any remaining issues.

Looking Back on Years under the Long-term Management Plan “NITTOKU SHINKARON”

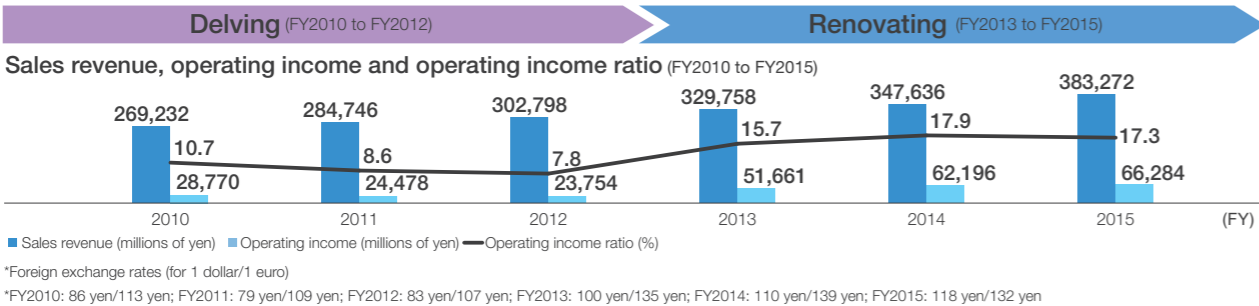
The “NITTOKU SHINKARON” is NGK SPARK PLUG’s long-term management plan with the final year set as FY2019. Under this plan, through the 3-year phases of “Delving,” “Renovating” and “Evolving,” we have been seeking to become the No. 1 leading “Monozukuri” company that delivers real value to customers across the world, a highly profitable company, a progressive company and a human “asset” company toward the goal of delivering “Real Value” to all our stakeholders by 2020. In the following we will look back on the 10 years that we spent under the plan.

Long-term Management

Plan: NITTOKU SHINKARON (FY2010 to FY2019)



Looking back on the “Delving” and “Renovating” years

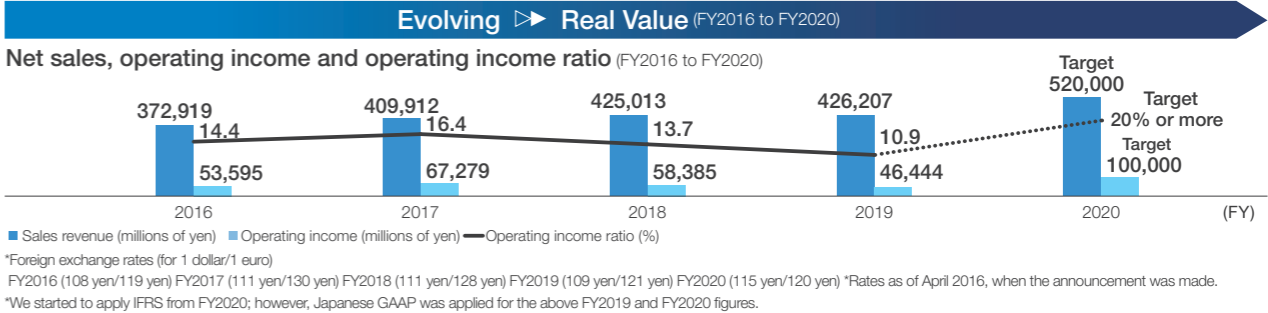


Delving		Renovating
Concept	Delve into existing business and seek new business	Launch new products or new business
Basic policy	Establish footing for a strong business foundation and further development	Make maximum use of management resources, implementing bold challenges in new business areas and sectors toward "Evolution"
Issues to focus on	(1)Restructure and solidify current businesses via stronger "Monozukuri" abilities (2)Develop new products for the next generation via new R&D structure (3)Strengthen organizational abilities via strategic use of personnel resources	(1)Provide new value in promising new areas via strategic marketing activities (2)Not only strengthen current core competencies, but also develop new core competencies (3)Recognize that human "assets" are what will "Renovate" the company and accelerate the renovation of the company via designating and achieving our own commitments
Achievements	To enhance our "Monozukuri" abilities, we established a Monozukuri center to make profound use of our competitive strength in plugs across all our businesses. We also separated technological development and new business development functions to take speedier actions under the direct control of the president, while reforming the personnel system on a global basis. We also reduced the number of directors to enhance the governance and transparency of management and to speed up managerial decisions.	Before launching new businesses, we discontinued the production of the organic package, transferred the dielectric business and made an asset transfer in the business of ceramic tubes for vacuum circuit breakers for the "selection and concentration" of our businesses. Meanwhile, we acquired all shares of NIHON CERATEC (presently NTK CERATEC), put BIDEIMICS on the market as a new cutting tool, established a division for fuel cells and released hydrogen leak detection sensors. We thus created a range of new businesses and products.
ESG measures	2010 • Founded the CSR Committee 2011 • Established the CSR Policy 2012 • Decreased the upper limit of the number of directors from 25 to 13 introduced the corporate officer system	2013 • Appointed an outside director • Launched DIAMOND (Women's Empowerment) Project • Began holding global personnel conferences 2014 • Increased the number of outside directors to two 2015 • Formulated the criteria for the appointment of independent directors • Began assessing the effectiveness of the Board of Directors • Established the working style reform committee
Remaining issues	• Examination of the direction for the structural reform of the semiconductor business • Strengthen technical ceramics divisions • Strengthen control functions and globalization of headquarters divisions • Thorough CSR • Improve organizational abilities	• Break away from 80%-plus reliance on internal combustion engines • Share and strengthen internal technologies; and establish a commercialization promotion structure • Create new businesses • Strengthen management foundations toward business growth • Improve organizational abilities

Achievements made for “Our Ideal Image in the Year 2020”

Monozukuri Company	Unique core technology	<ul style="list-style-type: none">Established an overwhelmingly strong position for spark plugsTook the top spot in the exhaust gas sensor market
	Optimum quality created by all-employee participation and manufacturing/technological innovation	
Highly Profitable Company	The No. 1 leading company delivering "Real Value"	<ul style="list-style-type: none">Achieved an operating income ratio of about 15% on average for five yearsIncreased the overseas production rate from 30% to 40%Launched the RHQ system for empowerment and enhanced the Group's abilities
	Global manufacturing and sales networks	
	Speedy, flexible business development capable of adapting to change	
Progressive Company	Sustained growth through strategic investment	<ul style="list-style-type: none">Fostered discussions including those with outside directors and enhanced governanceConducted strategic M&As and formed JVs (WELLS, Japan MDM, NTK CERATEC, CAIRE, MORIMURA SOFC TECHNOLOGY, CECYLLS)
	Corporate governance system for elevating corporate value	
Human "Asset" Company	Assertive dialogue with stakeholders and contribution to people around the world	<ul style="list-style-type: none">Formulated the Nittoku WayThe Nittoku Way refers to the values of the NGK SPARK PLUG Group that all employees commit to sharing and passing down to the next generation.
	Operations that will support the development of society	
	Fair corporate culture in which diverse personnel can further excel	
	Framework that allows people to be autonomous, challenging and active	
	High professional pride and company loyalty	

Looking back on the years under the seventh medium-term management plan



Accelerating Current & New Businesses			
Delivering “Real Value” to all stakeholders in FY2020			
1 Establishing new business pillars	2 Strengthening current businesses	3 Establishing strong business infrastructure	
FY2016	FY2017	FY2018	FY2019
Substantially increased shipment for both plugs and sensors and boosted profit by streamlining production and reducing the cost (but profit nonetheless decreased year on year due to strong yen). Made progress with the structural reform of the semiconductor business, "selection and concentration" of products and rationalization including personnel reduction, thereby greatly increasing revenue in the business. To solidify the management foundation, launched new organizations and programs with a focus on human resources.	Successfully implemented the strategy for the Chinese market, as upheld in the seventh plan, thereby expanding sales and profit. Increased operating income by rationalization and cost reduction for productivity improvement. In the structural reform of the semiconductor business, completed the consolidation of production bases for higher productivity. Also improved the product mix by expanding the shipment of packages for smartphones. For speedier decision-making, fostered the GHQ-RHQ plan and localization.	Increased shipment for plugs and sensors as well as the ratio of high value-added products, thereby improving the product mix. However, unable to cover increases in the expenses incurred outside the scope of existing businesses, such as the packaging & transportation cost, new business-related cost and SG&A expenses for infrastructure improvement. Fostered the building of a system to establish a global supply chain as a core issue identified in the three-year Evolving stage, and began conducting tests for the system in Europe.	Due to COVID-19, the automobile industry, along with others, faced economic stagnation on a global basis. Despite this, NGK SPARK PLUG promoted sales of high value-added plugs and sensors, and as a result sales increased year on year in the automotive components business, excluding the impact of foreign exchange rate fluctuations. In the semiconductor business, we achieved the target of recording profit on a yearly basis for FY2019, which we set in the seventh medium-term management plan. As for new business development, we established a new company for solid oxide fuel cells.
<ul style="list-style-type: none">Increased the number of outside directors to threeJoined the UN Global CompactBegan a program to develop the next generation of global business leadersFounded the Working Styles Reforming OfficeFormulated the "Global Eco Vision 2020"	<ul style="list-style-type: none">Established the Nomination and Remuneration CommitteesIntroduced the performance-linked stock remuneration systemTurned overseas bases into regional headquarters (RHQ)Designated as ESG investment stockCertified as Bronze Class at the Sustainability Award 2017Certified as one of the Excellent Enterprises of Health and Productivity Management 2018 ("White 500")Certified as one of the New Diversity Management Selection 100 companiesEstablished the Diversity Promotion Section	<ul style="list-style-type: none">Full compliance with the revised Corporate Governance CodeIncluded in the DJSI Asia Pacific Index for two consecutive yearsCertified as a Nadeshiko Brand companyConcluded with Komaki City a cooperation agreement to assist people who need special medical care for home oxygen therapyCertified as one of the Excellent Enterprises of Health and Productivity Management 2019 ("White 500")	<ul style="list-style-type: none">Published the Sustainability Data BookCertified as BRONZE CLASS in the Overall Category and as SILVER CLASS in the Industries Category (Glass and Ceramics Products) at the SUSTAINA ESG AWARDS 2019Certified as one of the Excellent Enterprises of Health and Productivity Management 2020 ("White 500")
<ul style="list-style-type: none">Response to contraction in the use of internal combustion engines and movement toward EVs and electrification: We are conducting examinations about products for EVs in cooperation with external partners, though demand for ICE engines is still growing.Development of new businesses: We have sown seeds, which now have to be grown.Fair corporate culture that allows for diverse individuals to reach their potential: While the number of female managers increased and a foreign national was appointed to the position of corporate officer in the Evolving phase, the rates should be further increased, and it will take more time for the establishment of such a corporate culture.Enrichment of corporate governance: While measures were taken to ensure compliance with the revised Corporate Governance Code, there remain issues regarding the implementation of rules at the GHQ and RHQ.			

Risks and Opportunities in the External Environment

The markets surrounding NGK SPARK PLUG are entering a transitional phase, and our businesses are facing significant changes.

We aim to identify short- to medium-term and long-term risks and opportunities, and to maximize profit in existing businesses, while also turning risks into chances and boldly embarking on the challenge of creating new businesses that look to the future.

External environment

Global environmental issues

- Climate change
- Decarbonized society
- Environmental destruction

International issues

- Protectionism
- Emerging economies
- Disparities in society
- Human rights

Establishment of a society where economic development and resolution of social issues are compatible

- Robots, automation, labor saving
- Artificial intelligence (AI)
- Sensing IoT
- Nanotechnology
- Biotechnology
- Aging society with a decreasing birthrate
- Diversity
- Pandemic
- Earthquakes
- Work-life balance

NGK SPARK PLUG's viewpoint	Risks and opportunities		NGK SPARK PLUG's measures	
Mobility	● Decline in the number of internal combustion engine vehicles	Risk	Optimize production and increase competitiveness to expand market share	
	● Stricter environmental regulations	Opportunity	Increase market shares of high-performance plugs and sensors	
	● Expanding demand for automobiles in emerging economies	Opportunity	Improve the production systems of local plants	
	● Change in people's preferences regarding transportation means and consumption	Risk	Opportunity	Enhance marketing, provide maintenance services that meet individual lifestyles, increase electrical efficiency by the use of ceramic components, and offer MaaS to meet specific needs
Energy	● Effective use of renewable energy	Opportunity	Store electricity and energy derived from renewable energy sources ⇒ Develop SOECs and all-solid-state batteries	
	● Distributed power sources, and local production and local consumption of energy	Opportunity	Develop devices for distributed power supply ⇒ Develop and commercialize fuel cell batteries and all-solid-state batteries	
Information & communication	● Expansion of demand for semiconductors due to the enhancement of communication performance	Opportunity	Develop 5G and 6G high-speed communication devices and related components	
Medical treatment and healthcare	● Expanded demand for devices for optimal treatment, disease prevention, health management and recuperation	Opportunity	Conduct the respirator business, provide artificial bones and derivative products by applying ceramic materials and offer non-invasive treatment and disease prevention devices/services by the use of ultrasound technology	
Sensing	● Expansion of the sensing field	Opportunity	Make use of sensing IoT technology to foster automation, optimization and generalization for higher business efficiency	
Environment	● Reduction of greenhouse gas emissions for a carbon-neutral society	Risk	Introduce environmental technologies ⇒ Introduce energy-saving equipment and renewable energy	
	● Stricter regulations on hazardous chemical substances	Risk	Opportunity	Replace hazardous chemical substances used in products with alternatives and spread the use of lead-free piezoelectric materials
	● Effective use of water resources	Risk	Reduce water use at high-risk bases	
Society	● Diversification of human resources	Risk	Opportunity	Secure professionals through mid-career employment, implement educational programs for manager candidates, reemploy employees reaching the mandatory retirement age and encourage the employment of foreign nationals
	● Diversification of work styles and values	Risk	Opportunity	Diversify work styles and provide work-life balance support systems (telecommuting, shorter working hours)
	● Promotion of employees' safety and health	Risk	Opportunity	Foster health and productivity management and promote anti-pandemic measures
	● Respect for human rights	Risk	Identify the impact of our business and implement measures	
	● High-quality products and services	Risk	Opportunity	Adhere to the "Quality Product" principle, and build and develop an even stronger quality management system
Governance	● Diversification of managerial human resources	Risk	Opportunity	Diversify managerial experiences and skills in response to changes in the management environment ⇒ Increase the ratios of outside directors, female directors and non-Japanese directors
	● Speedier managerial decisions	Opportunity		Foster DX ⇒ Foster digitization and visualization at plants and offices and in logistics, accounting and personnel operations
	● Measures for information security	Risk	Strengthen CSIRTs and incident-response organizations and foster awareness-raising activities	
	● Earthquakes and disasters caused by climate change	Risk	Make BCPs and enhance the supply chain	

2030 Long-term Management Plan “NITTOKU BX”

NGK SPARK PLUG has formulated the 2030 Long-term Management Plan “NITTOKU BX”, deeming 2030 as a milestone year for the growth of the company over the next two decades. We will provide an overview of this plan.

2040
Vision

Change drastically beyond the current way

Delivering new value in the face of an ever-changing future.

To meet large-scale global environmental changes, we too must change.

Creating an organization comprised of passionate individuals working together
to face challenges head-on in order to a better society.

We are transcending imagination with technology that transcends boundaries.

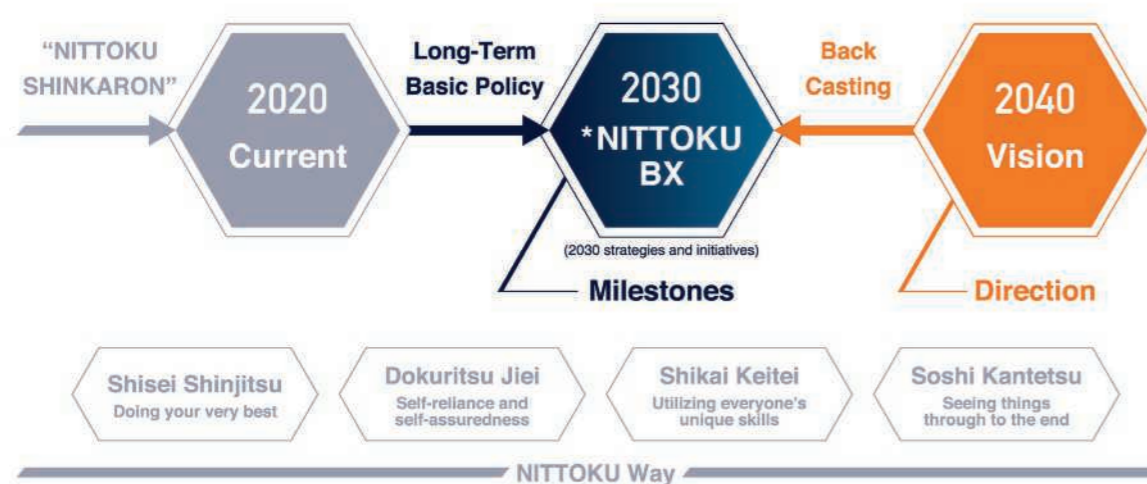
We are more than just a ceramics and
we are going in new directions.

X Beyond ceramics, eXceeding imagination

2040 Vision and the Long-term Management Plan

For the solution of various social issues, we need to search for a new way of doing business by thinking beyond “What ceramics can do.” We aim to meet the challenge of going “beyond ceramics” and “exceeding the imagination” of society and ourselves, thereby changing “drastically beyond the current way” in 2040. We have created the 2030 Long-term Management Plan “NITTOKU BX” by backcasting from the 2040 Vision. We regard 2030 as a milestone year to ensure we are on the right path heading into 2040.

2030 Long-Term Management Plan

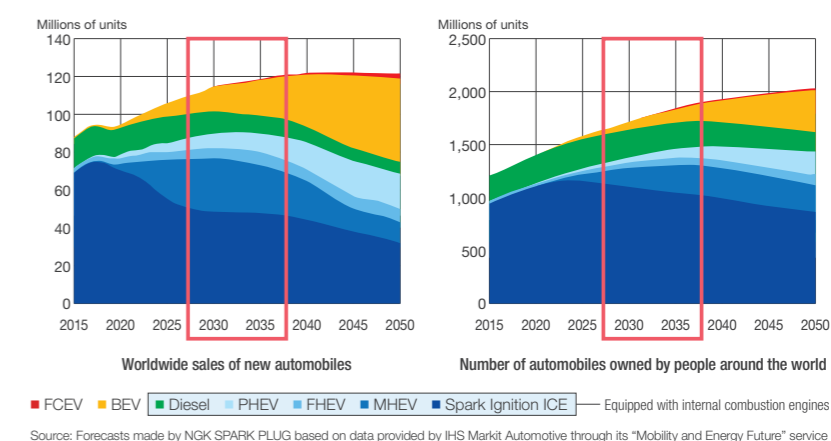


* NITTOKU BX : “Beyond ceramics, eXceeding imagination”

2030 Long-term Management Plan

Changes in the external business environment

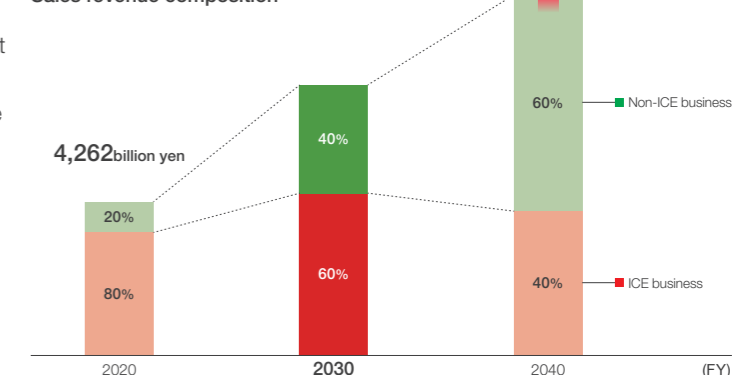
According to these graphs, which forecast the sales volume of new automobiles and the numbers of automobiles owned by people around the world, the number of those equipped with internal combustion engines will continue to increase until around 2030. However, in the middle of the 2030s, the number will peak and begin to go down. We therefore need to shift to a business structure that does not rely on the sales of products used in internal combustion engines by the middle of the 2030s.



Transformation of the business portfolio

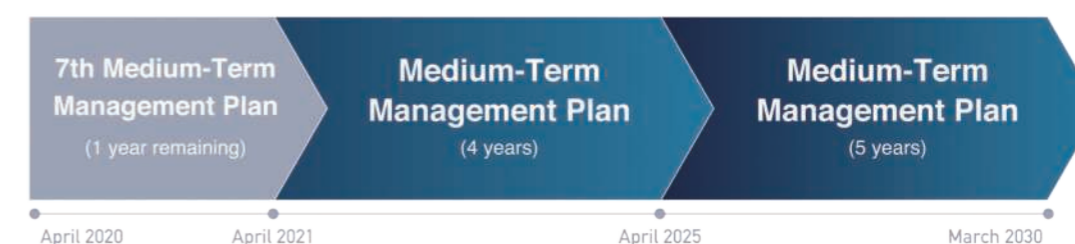
NGK SPARK PLUG is currently doing business with a focus on internal combustion engines (ICE), but in the future, we need to be involved in more than ICE business and embrace the challenge of starting new businesses to transform our business structure. Specifically, as the 2040 targets, we aim to decrease the proportion of ICE business in our total Sales revenue from the current 80% to 40% while raising that of non-ICE business from the current 20% to 60%, thereby transforming our business portfolio. To achieve these targets, we will decrease the ratio to 60% and increase the ratio to 40% for ICE business and non-ICE business, respectively, as milestone targets for 2030 under the 2030 Long-term Management Plan “NITTOKU BX”.

Sales revenue composition



Structure of the 2030 Long-term Management Plan “NITTOKU BX”

The 2030 Long-term Management Plan “NITTOKU BX” is a plan composed of three medium-term management plans: the seventh medium-term management plan (the last year of which is the first year of the long-term management plan), a four-year medium-term management plan and a five-year medium-term management plan. We will further concretize this 10-year plan.



1. Strengthen current businesses
2. Establish new business pillars
3. Establish strong business infrastructures

Break to change. Change to create.

Respect Dokuritsu Jiei.
Start from scratch.

Extend for the future. Spread out to exceed.

To foster a new corporate culture,
we will work toward sustainable growth.

Guiding principle

We have upheld “Change with Will” as the guiding principle for the 2030 Long-term Management Plan. Specifically, with a strong commitment (“Will”), we will foster “Change” for coexistence with society and people. We aim to reform our organizations and business structure with speed to make our company one that can coexist with stakeholders from a global perspective. We will instill this guiding principle in our employees for the achievement of the targets set in the plan.



Business fields to focus on

We are focused on both existing and new businesses in four fields: Environment & Energy, Mobility, Medical, and Communication. Our core competence includes ceramic materials technology, sensing technology and a global production/sales system. We will add “Something New” to these to create new value and foster “Open Innovation” both internally and externally, thereby achieving further growth in the four fields.



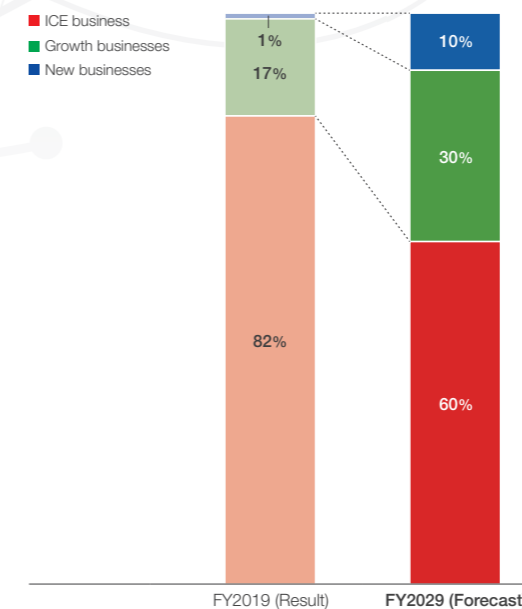
*Ceramic material technology, application technology in harsh environments, disparate material bonding technology, sensing technology, rapid high-temperature heating technology, and global production and sales system

Strategy: “Business Portfolio Transformation” for Growth

As the mainstay of the Long-term Management Plan, we will foster “business portfolio transformation.” As for ICE-related business, we will be able to expand revenue and operating income until 2030 in line with an increase in the number of ICE-equipped automobiles. In anticipation of the business environment in 2040, we will pursue rationalization, higher efficiency and selection and concentration. For the “Environment & Energy,” “Medical” and “Information” business domains, which are new to us and are not currently contributing to our profit, we will expand sales and profitability in each in the lead-up to 2030, aiming to turn these businesses into our profit pillars in 2040, although their operating income margin may be still low in that year. We will increase efficiency in our ICE-related business with a focus on making profit, use the cash gained in that business for the growth businesses and achieve a profit growth rate that is higher than the market growth rate for the businesses. For new businesses, we will strictly screen the business themes to be continued, thereby promoting the “metabolism” of the businesses.

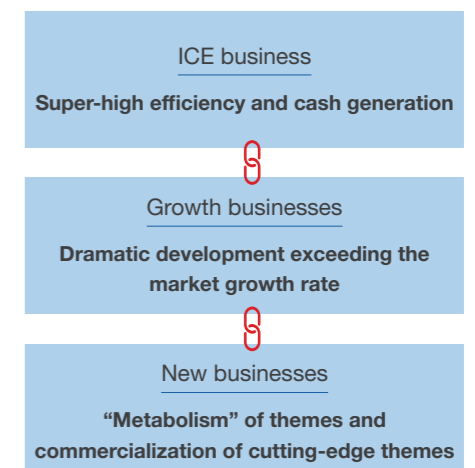
In order to promote this kind of business portfolio transformation, it is essential to achieve the following three aims: management innovation, clarification of responsibilities and authority, and willful cultural change. We will break our dependence on ICE-related business based on this recognition.

Sales revenue composition



*Numerical targets considered before the COVID-19 outbreak

Secure profit while transforming the business portfolio



Specific measures

1	Management Innovation	<ul style="list-style-type: none"> Small, strong and agile head office to support business portfolio transformation Quick management decisions supported by DX 	⇒P.41
2	Clarification of Responsibilities and Authority	<ul style="list-style-type: none"> Strong authority and strict responsibilities to promote portfolio transformation Build an optimized structure and system for each business 	⇒P.41
3	Willful Cultural Change	<ul style="list-style-type: none"> Undertake culture reform and strengthen the Group's abilities 	⇒P.42

1 Management Innovation

Create a strong, small, and agile head office. Supporting to speed up management decisions, and business portfolio transformation

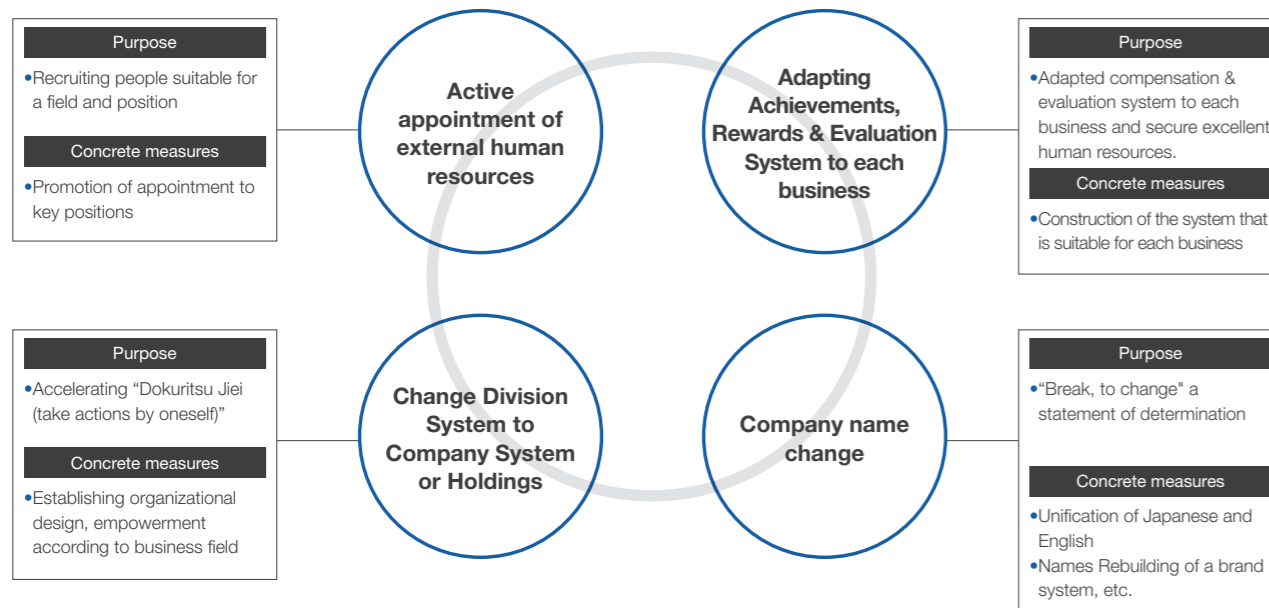
As a tool to speed up, we have invested digital infrastructures. Organically connecting , and producing the information necessary for management decisions that were not seen before.

As a tool to speed up management decisions, we will organically foster DX investments to make invisible information visible.



2 Clarification of Responsibilities and Authority

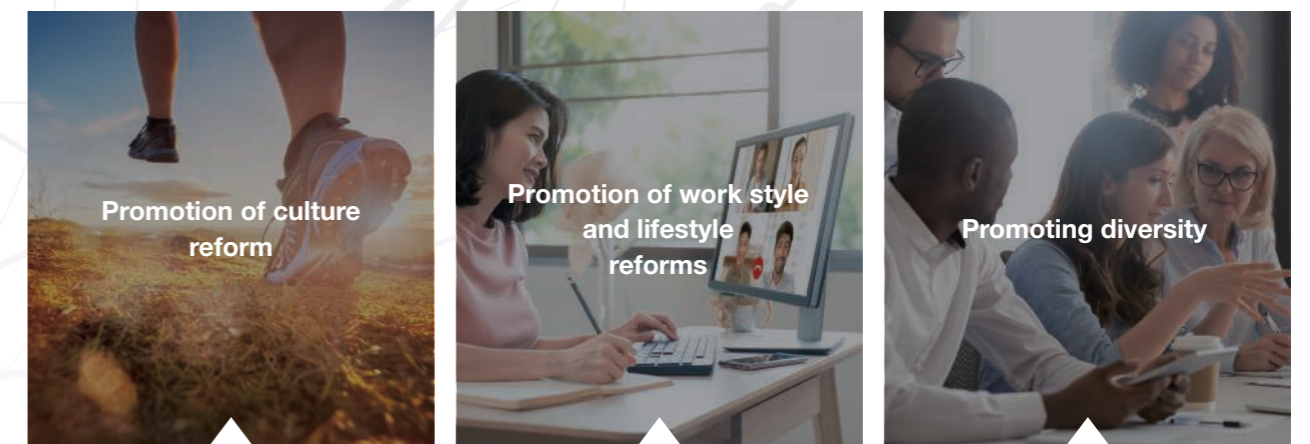
We will speed up management operations even more. Specifically, in addition to proactively appointing external human resources to assume core positions, we also think it necessary to introduce performance-based rewards and evaluation systems that are suitable for each type of business, including growth businesses, stable businesses and those that need to be fundamentally reformed. We are also conducting specific examinations with a view to introducing an in-house company system and performing a spin-off. Moreover, based on the 2040 Vision, we will consider changing our corporate name in the future.



3 Willful Cultural Change

Change the company, strengthen the Group, and achieve “change beyond recognition”

In order to foster management innovation and clarification of responsibilities and authority as explained above, it is important to raise the awareness of both the management team and employees alike. Each group needs to think about the meaning of their respective duties, being well aware of the guiding principle “Change with Will” as well as the need to “change drastically beyond the current way” and add “Something New” to increase their own value. This will help NGK SPARK PLUG to change from a “defensive company” to an “offensive company.” We will also press forward with reforms for diverse and flexible work styles/lifestyles and to make our company one that can coexist with others by accepting mutual diversity.



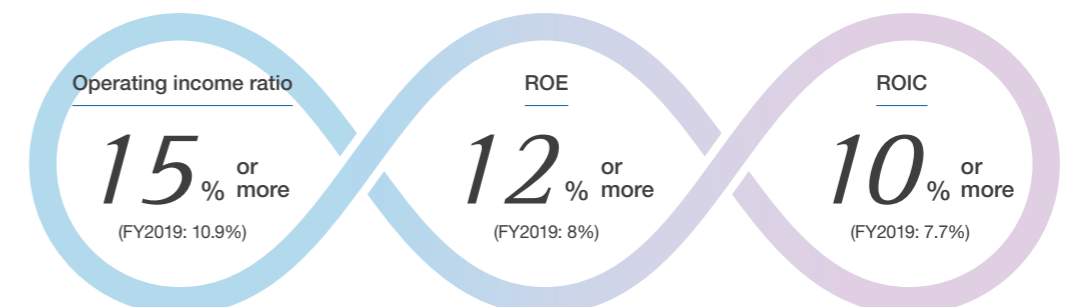
From conservative to progressive culture Pursue “IGNITE YOUR SPIRIT” Foster common values and think optimally for all

Promote work outside the company, including telecommuting Flexibility of working hours and multiple shifts Productivity improvement (30% improvement from FY2019)

Promote the employment of women, foreign nationals and mid-career hires (ratio of these to the total number of managers: 25%) Proactive use of external human resources

Management target

The 2030 Long-term Management Plan “NITTOKU BX” shows the midway milestone for our 2040 Vision. Under this plan, we will strive for business portfolio transformation, clarification of responsibilities and authority and investment in new businesses. In line with the guiding principle, “Change with Will,” which should be followed by all employees, we will achieve “Beyond ceramics, eXceeding imagination.” For the management targets for FY2029, we aim to achieve an operating income ratio of 15% or more, ROE of 12% or more, and ROIC of 10% or more.



NGK SPARK PLUG’s Innovation

Break the Old Mold to Speedily Develop a New Business for the Solution of Social Issues

Representative Director, Member of the Board, Executive Vice President

Toru Matsui



Establishing the Global Innovation Division to enhance the system

In April 2020, NGK SPARK PLUG established the Global Innovation Division to accelerate its measures for new businesses. The automobile industry is going through a once-in-a-century period of change, and our existing business with the industry will reach its peak in the middle of the 2030s and then begin to trend downward. Based on this assumption, we have been working tirelessly to create a new business in a proactive manner. It is, however, not easy to create a new business. You can do it successfully only a handful of times out of 1,000 attempts. It also takes time to make a new business sustainable, and so we need to buckle down for the long haul to develop a new business.

NGK SPARK PLUG has been searching for new business seeds by taking all possible approaches and making a concerted effort on a firm-wide basis and across all divisions, not just at the R&D departments, such as the Engineering R&D Group and the Business Development Division. For the future, we need to conduct activities to create and grow new businesses in a range of fields while moving in the same direction as a whole. To this end, we established the Global Innovation Division. Its mission is to establish new profit pillars to support the company in and after 2030.

For the speedy launch of a new business

Concerning the flow to the launch of a new business, we will adopt the “agile development”^{*} method when applying existing technologies for the development of a new business, thereby shortening the lead time. NGK SPARK PLUG did not have enough experience in the agile development method and so we appointed Mr. Dirk Schapeler to head up the Global Innovation Division, as he has abundant expertise regarding the method and new business development. We have also adopted a two-pronged approach to new

As for the fields to be focused on, we will input resources intensively into specific fields within the following large business domains: “Environment & Energy,” “Mobility,” “Medical” and “Information.” At the same time, we will create new businesses in fields at the periphery of our major business fields, thereby expanding our markets and developing multiple businesses through one breakthrough.

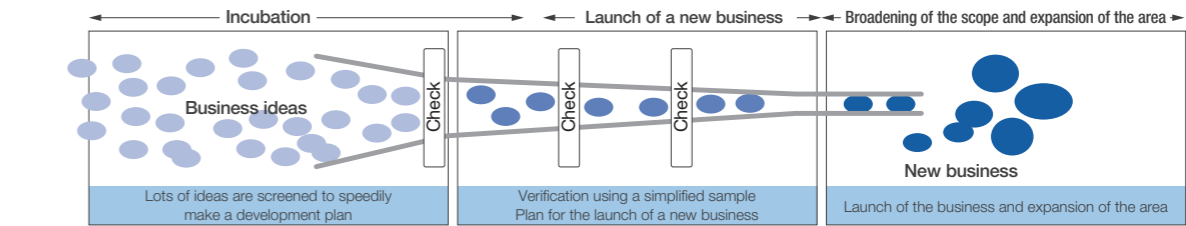
The challenge that we should meet now is to reform our mindset. For example, we have been listening to our customers’ opinions in our marketing activities, but we are not good at leading the creation of a market. Also, we are strongly committed to searching for seeds and technologies and good at conducting extensive research into the seeds. However, I am afraid that we are poor at hitting on new ideas to turn the seeds into products.

Concerning these issues, we will work to uncover solutions, but not by sticking to our conventional methods. I have long experience in sales activities in the automotive components business but am an “amateur” in the development of new businesses. However, because of this lack of experience, I think I will be able to address the related issues from a new viewpoint and not be trapped by conventional ideas.

business development: solution-based development and technology-based development. Technology-based development represents our traditional development method, but we have added a new aspect to it. When developing a new business, we used to aim for the supply of a new component as the goal, but now we aim to propose applications and offer related services in addition to commercializing a new product.

^{*} Agile development: Development method designed to shorten the lead time

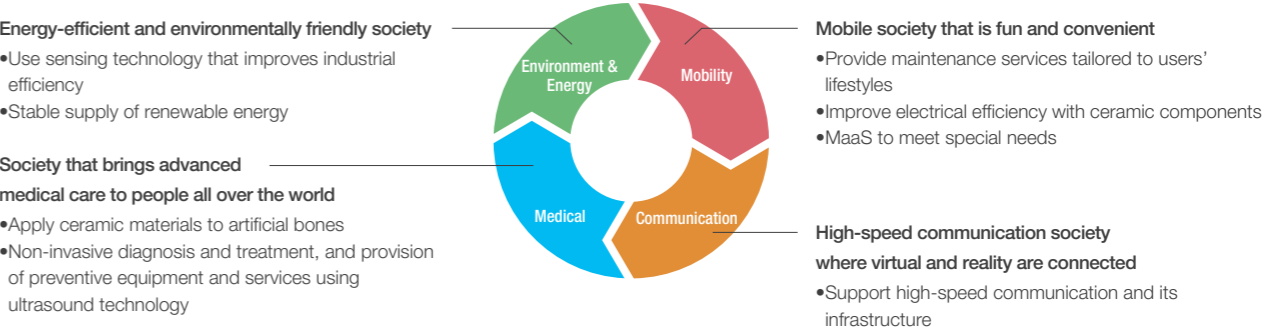
Flow to the launch of a new business



Inputting resources intensively, targeting eight themes

As described in the new long-term management plan, we will intensively input resources targeting the following eight themes. We can achieve most of the targets by using our existing

technologies and sales networks. For the resources that we do not own, we will gain access to them through M&A and partnerships with other companies.



Toward the creation of value that only NGK SPARK PLUG can provide

Last May, I had an opportunity to participate in an exhibition held with the participation of startup companies. Through the event I learned that startups were launching a range of businesses with passion and a strong commitment to solving social issues for the creation of a sustainable society. It helped me reaffirm that innovation starts with a commitment to sustainability.

There are many companies besides startups that work for the solution of social issues. For NGK SPARK PLUG, as one such company, to make contributions in this field, it is important that we have value that only we can provide. We need to offer uniqueness through our products if we want to sell them, and if we cannot sell our products, we cannot make contributions to society through them. We need to meet this great challenge of building competitiveness with uniqueness.

I think we can address specific issues by combining technologies that are relatively robust, if not absolutely so. However, because we view things in a limited manner, our product lineup is also limited. I think we need to take a broader view of things to broaden the lineup.

We are already looking to “Something New.” As a result of promoting the use of external human resources, employees are now getting more inspiration from one another. There are some young employees who are working with mindfulness. I would like to change the corporate culture under the leadership of these individuals. I feel that employees are otherwise confining themselves to their field of specialization and tend to have a narrow perspective. I would like to get them out of their shells.

As mentioned above, NGK SPARK PLUG appointed a foreign national to serve as head of the Global Innovation Division as the first appointment of a foreign national to lead a head office division in the history of the company. When working to develop a new business, we might face uncertainties and a chaotic situation. However, we have human resources who are ready to tackle such situations and are actually doing it with autonomy. We will make use of the power of these human resources to foster innovation. Looking ahead to the next term, we can already see the light.

The Finance Officer Outlines the Financial Strategy

Distributing the cash gained in ICE business in a balanced manner to multiple businesses, including new and growth businesses, while maintaining a robust financial structure

Member of the Board Executive Officer
Corporate Administration Group

Kenji Isobe



Recent features of our financial strategy

We are now in the final year of the seventh medium-term management plan, which ends in FY2020. Recently, the growth rate of the cost of sales and SG&A expenses has been exceeding that of sales, and there are two reasons for this tendency.

For the first reason, we have been proactively making capital and R&D investments. Anticipating an expansion of sales in the automotive components business, we have invested around 200 billion yen in equipment over the last five years, while also investing in R&D as an upfront investment to develop new businesses to transform our business portfolio in light of the fact that sales of internal combustion engines are predicted to reach a long-term peak.

For capital investment, the automobile industry attributes importance to quality, and it therefore takes time to for us to complete the process from making a capital investment to the release of a new product in the market. Accordingly, we need to make investments earlier in the automotive components business than in other businesses. Around the time of the collapse of Lehman Brothers, we hesitated to make capital investments and as a result missed a business

opportunity. I therefore think it essential to make investments as needed. We thus continued to make investments also when our sales were stagnant, which increased the ratio of SG&A expenses to revenue.

For R&D, I believe that the value of our company lies in creating new products as a manufacturer with core technologies for ceramics and the ratio of R&D cost to revenue has been high for years. We need to make R&D investments on a continual basis for the 10 years targeted under the 2030 Long-term Management Plan “NITTOKU BX”, which we launched in FY2020 as our new long-term management plan.

For the second reason, corporate expenses increased as social demands for corporate governance and others expanded. In order to meet such social demands, we made more investments to build governance and compliance systems as the management foundation, which increased SG&A expenses. However, these investments are necessary for sustainable corporate growth.

Making better use of the earning power for higher profitability

Toward FY2029, which is the last year of “NITTOKU BX”, we aim to transform our business portfolio so that ICE-related business and the growth and new businesses will account for 60% and 40% of our revenue, respectively. However, as

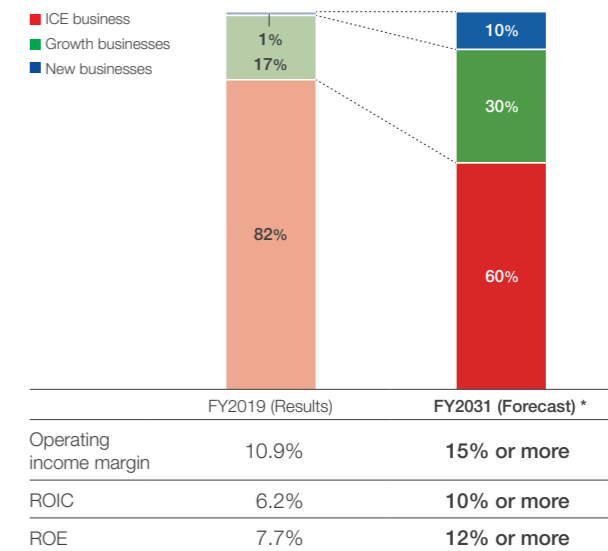
a precondition for this, we need to secure profit steadily in ICE-related business, which we expect to grow further until FY2029. Even if the automobile market does not expand as expected, we will be able to increase our revenue and profit

by increasing the sales of high value-added products, such as precious-metal plugs and wide-range oxygen sensors.

We have great earning power in ICE business and can increase our profitability even more. Based on our technological advantages and global sales channels, we will continue to maintain high profitability. Also, for capital investment, we have already completed large investments in ICE-related business and will make only minor investments in the future, specifically to repair or replace our existing equipment. This will make it easier for us to maintain high profitability.

By maximizing our performance in the core automotive components business, we will achieve an operating income margin of 15% or more, which is one of the targets set in “NITTOKU BX”.

Sales revenue composition



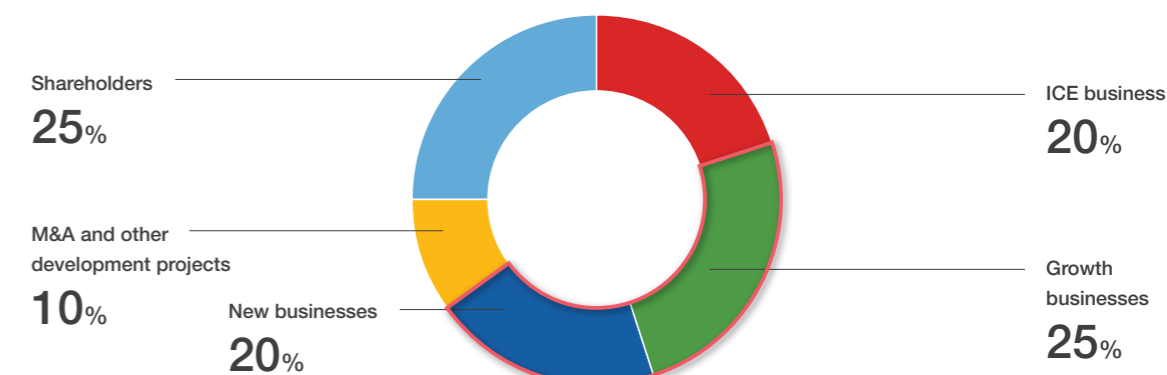
Secure profit while transforming the business portfolio

Balanced allocation of cash with a focus on growth investment

As for the usage of earned cash, I think it is important to use it in a balanced manner. For the next decade, we will allocate the cash gained through ICE-related business in a balanced manner to the SPE, medical, fuel cell and other growth and new businesses, to M&A projects, and to shareholders.

Specifically, we plan to allocate 20%, 25%, 20%, 10% and 25% of the cash to ICE business, growth businesses, new businesses, M&A and other development projects, and shareholders respectively.

Cash allocation for the period from FY2020 to FY2029 (on a cash-flow basis)



Proactively allocate cash to new and growth businesses

New Long-term Management Plan

The Finance Officer Outlines the Financial Strategy

Maintaining the rating and reinforcing corporate resilience based on a strong financial structure

While the spread of COVID-19 is having an impact on companies, their resilience against the crisis seems to depend on the strength of their financial structures. The impact of the infectious disease on our company is relatively small, because we have a strong financial structure.

COVID-19 has also changed the ideas of shareholders and investors. “Before coronavirus,” we received many comments calling on us to make growth investments and return profit to shareholders rather than retaining earnings within the company. Now, however, the number of those who want this seems to have decreased somewhat.

However, our capital adequacy ratio has been showing a tendency to decrease recently and has dropped to about

60%. The appropriate capital adequacy ratio differs by company, but if we can maintain the rate of 60%, we will be able to continue to receive a stable high investment-grade rating going forward.

In the future, we might face changes in our external environment more frequently than before, with factors that might affect our business management including infectious diseases such as COVID-19 as well as natural disasters and other risks that cannot be predicted in advance, along with large economic fluctuations. Based on this recognition, we will continue to maintain a capital adequacy ratio of 60% and a strong financial basis so that we can receive a high rating on a continual basis.

Promoting ROIC management from a long-term viewpoint

In FY2016, when we launched the seventh medium-term management plan, we introduced ROIC as a business management indicator with an eye to eliminating the corporate culture of attributing importance to PL.

Recently ROIC has been showing a downward tendency at our company, and one of the causes of this

is increased inventory. For OEM products to be supplied to manufacturers, we need to have enough inventory for immediate supply at all times as the basic rule. Due to COVID-19, our sales volume temporarily decreased for OEM products and so we should have cut down the amount of raw materials that we ordered for the manufacture of these products. However, we did not in fact reduce the amount for the purpose of maintaining the sustainability of the supply chain and the sustainable growth of the whole industry, and also in consideration of the impact on suppliers of the materials. As a result, the inventory of raw materials expanded.

However, this is a temporary phenomenon and if the sales level returns to normal, the issue will be resolved. For ROIC, we need to view it from a long-term perspective. By using the ROIC tree more carefully and at grassroots levels on-site, we need to link the ROIC target upheld by the company with the ROIC target set by on-site employees.

We are facing these challenges and are still only halfway to the goal for ROIC management. In the next term we will restructure the organization and introduce an in-house company system, but we will continue to promote and enhance the use of ROIC as a performance indicator.



Returning profit to shareholders with a focus on the dividend payout ratio

NGK SPARK PLUG has been upholding the stable payment of dividends as its policy on shareholder return, while continuing to review this policy on an ongoing basis.

In the society of the future, uncertainties will increase, and the economic cycle will become shorter. Amid this situation, how should we return profit to our shareholders? We have had repeated discussions on this question and have changed our policy to focus on the dividend payout ratio in and after FY2020. Over the decade to FY2029, which is the period set for “NITTOKU BX”, we plan to

allocate 25% of profit gained to shareholders on a cash-out basis, with the dividend payout ratio at around 40%. We will decide on the dividend payout ratio annually, in consideration of the business environment for the year.

When we make profit, we will return it appropriately to shareholders but when we do not make profit, we will limit the return. I believe that we can gain the understanding of shareholders and investors about this policy on the payment of dividends.

Steadily implementing the financial strategy to attain the targets

In FY2019 we introduced the International Financial Reporting Standards (IFRS) to the company, as we conduct business on a global basis and nearly 30% of our shareholders are foreign nationals. By making financial reports based on the IFRS, I think we can further increase the corporate value of our company.

We also began making consolidated tax payment in April 2020. In consideration of the fact that we will restructure our

organization in the next term and launch new businesses, we expect that we will be able to optimize our tax payment through this consolidation when we have both profitable and unprofitable companies within the Group.

We will steadily implement these initiatives and the financial strategy for the achievement of the targets set in “NITTOKU BX”.



4

Business Infrastructure to Support Sustainable Growth

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We have promoted internal reform to establish strong business infrastructure as a key initiative set forth in the seventh medium-term management plan ending FY2020.

We will continue with reform efforts under the 2030 Long-Term Management Plan “NITTOKU BX”, started FY2020, to enhance the Group’s organizational capacity and develop strong business infrastructure, with the aim of ensuring sustainable growth.

Sustainability Adds to the Company's Strength

Linking Business to Social Responsibility

Member of the Board
Executive Officer
Corporate Strategy Group
Mikihiko Kato



From “defensive CSR” to “aggressive CSR”

Our CSR activities have been conducted mainly by two organizations: The CSR Promotion Dept. and the CSR Committee, both established in 2010. At the beginning, the activities were based on the concept of “corporate social responsibility = legal compliance” and thereby focusing primarily on compliance issues—particularly the then hot issue of prevention of unfair competition. This stance is what is so-called “defensive CSR.”

In the meantime, in our business activities, we have been developing spark plugs, oxygen sensors, and other products that meet environmental regulations in response to social demand. While doing so, we began to realize that these business activities can also be considered as CSR activities in a broader sense. We also became aware that our daily business practices must incorporate social responsibility, such as the use of packaging of spark plugs, sensors, and other products designed not just to reduce costs and increase usability, but also to minimize the environmental impact upon disposal by customers. Thus, for us, CSR activities now encompass a wide range of business practices, including the development of new products that contribute to solving social issues.

This change in our way of looking at CSR has coincided with a major social movement to spotlight the Sustainable Development Goals (SDGs). In response to these internal and external trends, we have decided to clarify our shift in stance toward “aggressive CSR” and renew our structure accordingly.

More specifically, we have established the Sustainability Promotion Dept. within the Corporate Strategy Group. The CSR Committee has been renamed the CSR and Sustainability Committee, and task force committees that focus on various areas have also been reorganized. Furthermore, the CSR and Sustainability Charter has been

developed to complement the Corporate Philosophy.

The CSR and Sustainability Committee is chaired by Board director. Committee meetings are held regularly twice a year, attended by all the board directors including outside directors and chairs of task force committees in areas relevant to the meeting subject (environment, safety and health, quality, etc.).

In the meetings, the participants discuss the priority issues set for each fiscal year and the chairs of task force committees report on their activities. Company-wide CSR activities are also evaluated and proposed, and this is when the committee's activities are most directly connected to the company's management.

The Sustainability Promotion Dept., established within the Corporate Strategy Group, works on diverse issues including the SDGs in close connection with the senior management and plays the role of a bridge between inside and outside the company. One of the major duties performed as part of this bridging role is to communicate opinions and requests from stakeholders outside the company—which have been increasing in number and variety recently—to the company's senior management and, when necessary, explain the company's view and response to the stakeholders. The department also serves a public relations function to actively disseminate information on the company's contribution to the SDGs and news related to the company's sustainability and CSR activities.

Another important role of the Sustainability Promotion Dept. is to raise employees' awareness of how their activities lead to achieving the SDGs.

Even when employees are engaging in activities associated with the SDGs, it is not necessarily the case that they are aware of it. As a matter of fact, there are many activities currently underway at the company that employees

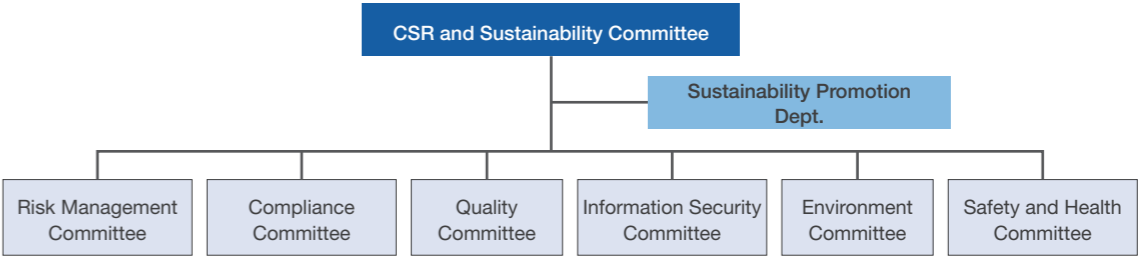
are not aware will lead to achieving the SDGs.

To eliminate this gap between what employees do and their awareness, the Sustainability Promotion Department is showing them examples of how the SDGs are incorporated into their everyday operations in order to renew their awareness of these global goals. It is expected that this activity of the department will encourage employees to see the SDGs as an issue more relevant to them, realize that they can do something, and explore what activities they can promote, leading to the expansion of their initiatives for the

goals. While employee sensitization on issues of CSR has been conducted since before the department was established, I feel that the initiative by the department has facilitated the implementation of such awareness-raising activity.

The renewed promotion framework has helped the senior management and employees begin to see the SDGs, sustainability, and other key issues as something more connected to them, understand that the issues are clearly at hand, and motivate them to advance CSR efforts.

Sustainability promotion framework



Corporate Philosophy and The Nittoku Way—the basis of our sustainability

The purpose of our existence, or what we are committed to, is stated in the Corporate Philosophy established in 1996. Although the word “sustainability” is not mentioned, the principles lead to sustainability.

The Nittoku Way, on the other hand, provides our shared values and manners in which we should act. It is a set of principles structured and organized by tracing back the company's history to Morimura Gumi, its roots, and by reflecting on its corporate mission with fresh eyes.

In 2017, when The Nittoku Way was drawn up, we were expanding our business vigorously through overseas M&As and the creation of new business lines, which brought about the rapid diversification of human resources and their values at our Group. To consolidate the unity of the Group while continuing the diversification of human resources, even during such a transitional period for the Group, we established The Nittoku Way, which clarifies our strengths, values and stance.

When we intend to change ourselves, we also need to think about what should remain unchanged. This is where the Corporate Philosophy and The Nittoku Way become important. They contribute to our sustainable development. We share these principles in training for new recruits and different levels of employees and repeatedly tell employees that they are valuable for the company and must be adhered to.

📖 Corporate Philosophy, The Nittoku Way⇒Page 4

Another important guidepost for us is “Change with Will!,” action guidelines set out in our new Long-Term Management Plan. “The key words with” (coexistence) and “Will” in the guidelines share underlying principles with the Corporate Philosophy and The Nittoku Way, and “Change” expresses our need to change on the foundation of those principles. We will ensure that employees will also become familiar with this meaning of the guidelines.

📖 Long-Term Management Plan⇒Page 37

Identification of Priority issues

To formulate the new Long-Term Management Plan, we identified material sustainability issues to which priority must be given. These issues were selected from the following two perspectives: materiality for stakeholders and materiality for our company.

📖 Priority issues ⇒ Page 55

Because stakeholders are diverse and their thoughts vary, a key to effectively selecting the right priority issues with high materiality for stakeholders is to maintain objectivity. For future selection, we, therefore, need a system that allows us to objectively determine the level of materiality for each issue, such as scoring each check item and prioritizing issues in

accordance with the total scores.

When it comes to the materiality for our company, on the other hand, we have issues, such as compliance, that have already been dealt with profoundly for many years and for which a management structure exists, as well as issues for which a management structure has yet to be put in place. These two types of issues have been clearly distinguished, and consensus has been reached within the company with regard to their order of priority.

We will work first and foremost on these issues with high materiality selected from the two perspectives. Needless to say, we will set key performance indicators for each check item to accurately monitor the progress of our efforts.

Let me explain from the next paragraph how we will address some of the priority issues identified, for which particular attention is required.

Response to climate change

Climate change is a serious threat that may severely damage the entire Earth in the future. If the climate changes radically, its impact will go far beyond affecting the economy. Climate change is already hitting many places so severely that we cannot remain indifferent to the issue. We have been fully aware of the importance of the climate change issue and working on various environmental tasks based on the Global Eco Vision 2020, such as the reduction of CO₂ emissions, under the initiative of the Environment & Safety Management Dept. We also declared our support for the recommendations of the FSB Task Force on Climate-related Financial Disclosures (TCFD) in July 2020.

In the next Global Eco Vision initiative starting from FY2021, we will raise the bar on our efforts by replacing the current targets on a basic unit basis with those on an absolute value basis. Since our production is expected to increase, setting targets on an absolute value basis can be said to be very challenging. To achieve these targets, we need some structural changes. We are planning to accomplish the targets through the use of a combination of multiple measures, such as those for creating new energy sources and turning sustainability efforts into new business opportunities.

Climate change is not an issue that can be solved within a short period by one company alone. We will start to see tangible progress only when a large number of small waves made by each company join together to create a big wave. To be a part of such a big wave, we will move ahead with what we can do step by step.

Risk management

Risk management is also another important priority issue for us. We established the Risk Management Committee in April 2020 as a task force committee focusing on this issue. The task force committee will compile a company-wide risk map and assess the impact of each risk based on the map to prioritize them.

As we thus initiated the process of enhancing our risk management and risk management awareness was rising among employees, we were able to respond swiftly to the outbreak of COVID-19 with the safety and health of employees foremost in our mind.

The COVID-19 pandemic also gave us an opportunity to gain risk management experience. Such experience includes the revision of the guidelines prepared at the time of outbreak of severe acute respiratory syndrome (SARS) several years ago and the modification of parts of the guidelines that are unfeasible to implement, as well as the verification of our contingency framework.

It is difficult to make perfect contingency plans by predicting what will happen in a crisis in normal times. We will continue examining and modifying the infection response guidelines. We will, needless to say, also enhance preparedness against various other risks, including earthquakes and other natural disasters, through conducting drills and by other means.

Information security

Similarly to infection and natural disasters, information security is also an issue with risks that need to be addressed properly, including cyberattacks and other increasingly complex and sophisticated network intrusion attacks. With the aim of countering such threats, the Computer Security Incident Response Team (CSIRT) has been formed to handle any incidents that occur, as well as to provide education to and raise awareness of employees globally.

Information security is also a task that automakers and other customers expect us to fulfill. We have a system in place that enables us to meet customers' stringent requirements and will beef up our efforts to prevent security-related incidents from occurring.

Global human resources management

At NGK SPARK PLUG Group, foreign employees account for about 40% of the total. As the need for overseas business management is increasing, and with a view to the future expansion of our business domains, we must continue to manage diverse employees. We have been shifting our approach to HR management from an "administrative" to a "strategic" approach. The establishment of the Strategic Human Resources Department in April 2017 is one example of such efforts. We now know about almost every employee working with us globally.

Our global HR development program ("HAGI Program") has always included several foreign trainees. The program is meaningful for trainees as it provides them with such a diverse learning environment, and an increasing number of former trainees are joining the management of the company.

The third term of the program will start in FY2020. In addition to this program, we will also provide a different educational opportunity for those of younger generations including foreign employees.

We also have launched a new program called the Nittoku Business School, which can be described as the NGK SPARK PLUG version of a business school. Evolving out of and replacing the HAGI Program, which was designed for candidates of next officers (M1 HAGI) and candidates of next general managers (M2 HAGI), the Nittoku Business School is targeted at personnel in section chief-class positions.

Our basic education policy was previously based on the idea of providing education to everyone equally, but this has been changed to focus more on providing intensive education to those selected. As a matter of fact, many trainees of the Nittoku Business School rate the program as "very stimulating and motivating."

When these personnel of new generations who received our education have grown, more solid global HR management will become possible.

When we talk about diversity, we tend to pay attention to the participation of women and foreign personnel. But this is not all that diversity is about.

Our company has not been able to fully take advantage of our human resources with a particular strength and personality. But, to embark on something new, we should maximize human resources who may have some weaknesses but who really excel at something. Instead of focusing on someone's view that is different from yours or parts of

someone's personality you don't like, if such a view or personality is his/her strength, we need to fully leverage that strength. This is, in my view, what diversity is. We will proceed with measures to maximize the potential of our personnel, including women and foreign employees, from this kind of broad perspective.

With regards to the issue of participation of women, we aim to raise the ratio of women in managerial positions. But I personally feel uncomfortable about simply achieving the target number. Making continuous efforts to raise the ratio of women in managerial positions itself should lead to strengthening the company in the long-term.

I myself have been involved in many HR development projects. What I felt from this experience is that the "see-what-I-do-and-learn-from-that" approach does not work. Instead, those in higher positions must acknowledge it to be their duty to nurture their staff to become full-fledged managers. Human resources must be developed with a clear intention. Supervisors need to be prepared to do what needs to be done, even as far as to expose both of their strengths and weaknesses and tell their staff to become a better manager than them. This is the way they can contribute to the long-term growth of the company.

Disseminating our efforts to contribute to society through our business

NGK SPARK PLUG has up to now been focusing on the development and production of components of internal combustion engines. We have been developing and delivering products that meet ever tighter regulations, which we believe has been a great social contribution.

However, when a new technology that replaces the internal combustion engine is developed, we must cultivate new businesses that go beyond the existing scope of our operations to further promote our social contribution. Oxygen concentrators, which are our main products in the medical business, and lead-free piezoelectric products are some of the examples that are expected to contribute to solving social issues as well as to help expand our business domains.

We are thus making many efforts to expand the range of our socially responsible businesses. But, as I said at the beginning, we need to link our business activities to the SDGs and other global sustainability goals and disseminate our efforts both inside and outside the company. This will lead our employees and the stakeholders associated with our

business to become aware of the importance of fulfilling social responsibility and thereby create a wider network of social contribution.

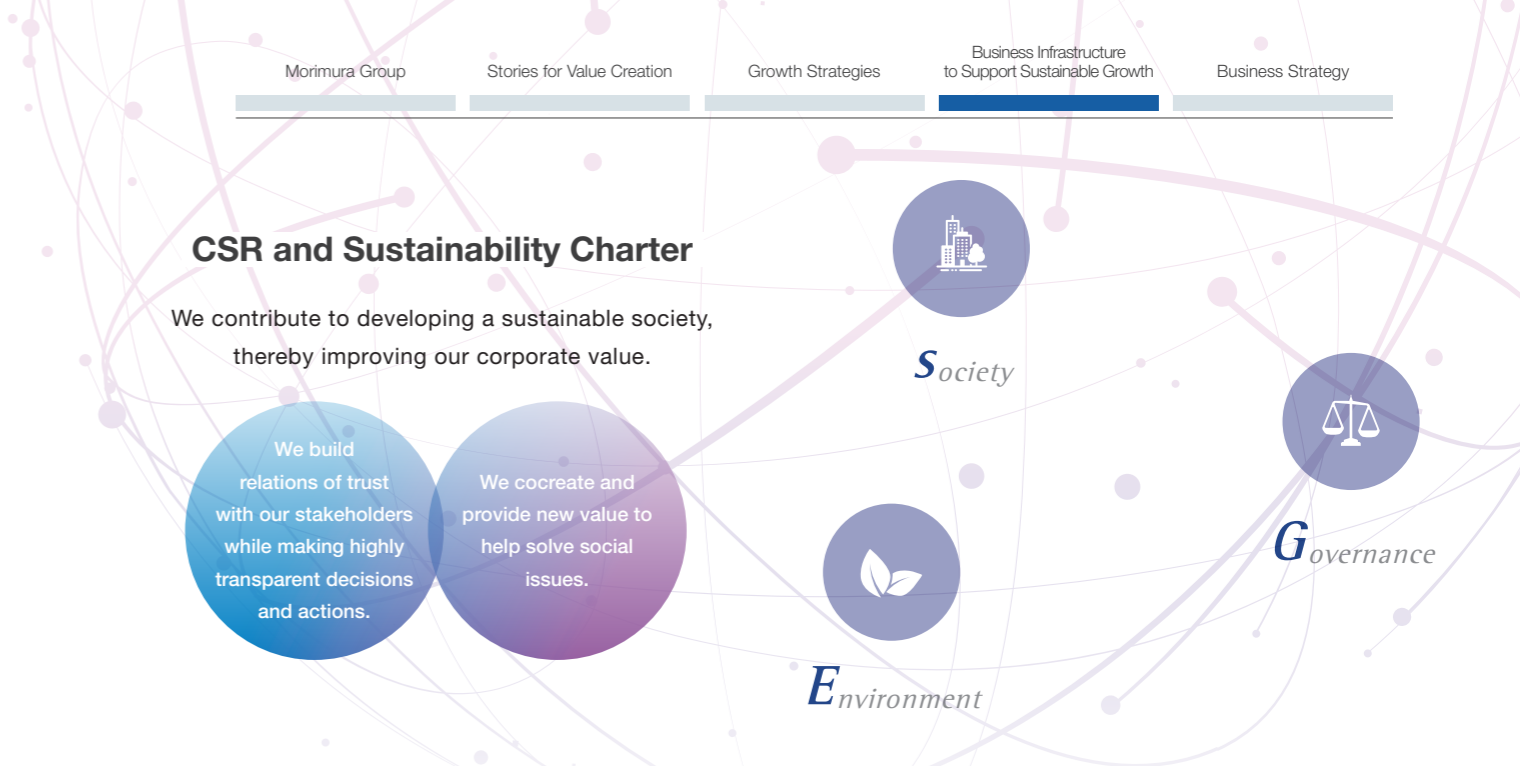
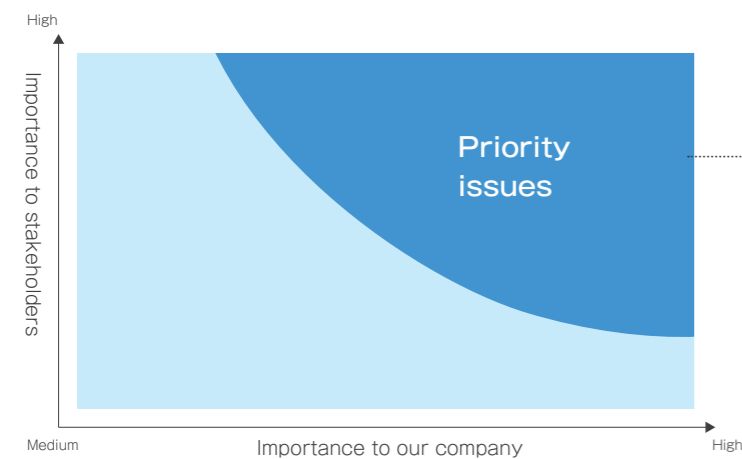
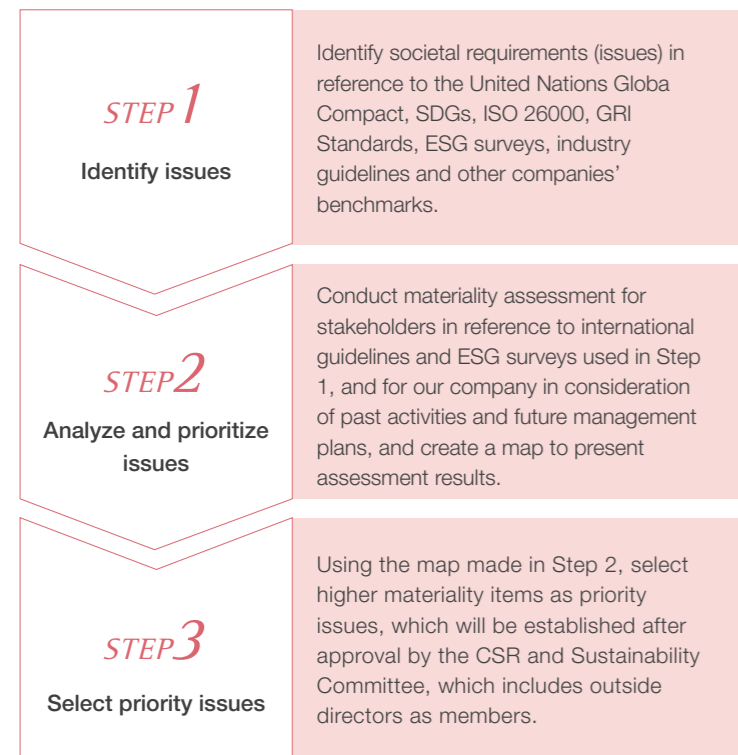


Priority Issues

We are committed to contributing to the realization of a sustainable society, thereby aiming to increase our corporate value. To this end, we first need to accurately understand the issues facing society, and then define priority issues (materiality) to be addressed by our group in reference to ESG (Environmental, Social, and Governance) factors and set appropriate goals from medium- to long-term perspectives.

Taking the above-stated steps, we have identified eight priority issues for the three ESG areas, and various initiatives aimed at realizing a sustainable society have been set in association with each issue. To implement these initiatives, progress will be monitored by the CSR and Sustainability Committee and reviews will be conducted in response to changes in the business environment, stakeholders' expectations and activity conditions.

Steps to define priority issues



	Priority issues	Contribution to SDGs	Major Initiatives	Goals and Outputs
<div>Environment</div> <div><i>E</i></div>	Responding to climate change		Reduction of CO ₂ emissions	CO ₂ emissions: 30% reduction from the FY2018 level by FY2030
	Providing environmentally friendly products		Dissemination and expansion of environmentally friendly products	Sales ratio of precious metal plugs: at least 50% Sales ratio of wide-range oxygen sensors and NOx sensors: at least 50%
<div>Society</div> <div><i>S</i></div>	Development of technologies, products, and businesses for contributing to the resolution of social issues		Development of fuel cells Development of lead-free piezoelectric materials	Popularization of high-efficiency distributed power supply systems with an eye on the use of CO ₂ -free hydrogen fuel Facilitating substitution for lead-based piezoelectric materials
	Global human resources management		Hiring of female, foreign national and mid-career employees Examination of new personnel systems	Improving operational efficiency through automation, optimization and generalization Percentage of female, foreign national and mid career executives: at least 25% Improved results of employee satisfaction surveys
	Corporate governance		Increasing the percentage of female and foreign national directors Increasing the percentage of outside directors	Percentage of female and foreign national directors: at least 30% Percentage of outside directors: at least one-third
<div>Governance</div> <div><i>G</i></div>	Risk management		Business impact analysis (creation of risk maps) and responses	Disclosure of risk identification processes and responses
	Compliance		Awareness surveys and continuous education for executives and employee	Conducting compliance questionnaires and disclosing results
	Information security		Maintenance and enhancement of the computer security incident response team (CSIRT) system	Strengthening activities through establishment of dedicated committees

Response to Climate Change and Environmental Management

Environmental Policy

As a globally developing core manufacturing corporation, we are aiming to simultaneously realize environmental preservation and corporate growth, based on the participation of all our employees, in order contribute to the construction of a sustainable society.

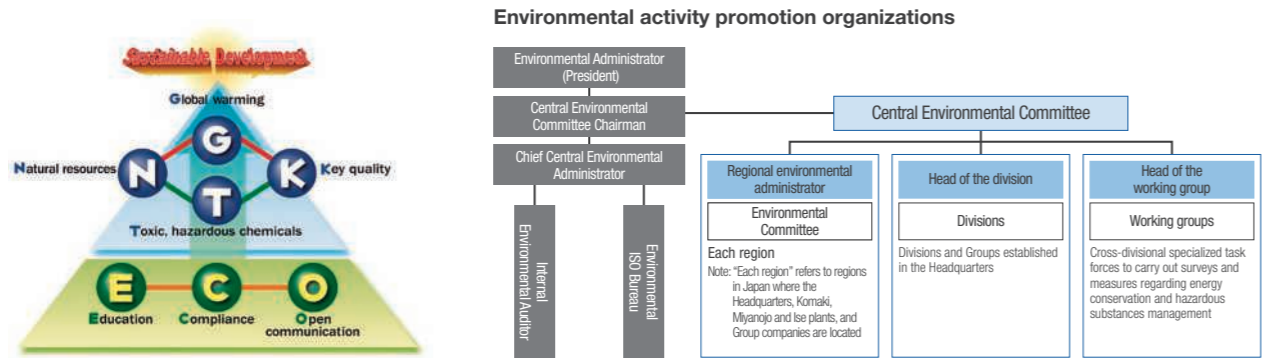
Action Guidelines

- We strive to utilize our unique technology to develop and offer environmentally friendly products.
- Through all of our business activities, we make particular efforts to prevent global warming, ensure efficient use of resources, and control chemical substances, in order to conserve the environment.
- We strive to raise the awareness of the environment among our employees to ensure that they all make positive efforts to conserve the environment.
- We observe the laws, ordinances, and agreements concerning environmental conservation.
- We aim to substantiate our information disclosure and communication activities, and also carry out environmental contribution activities aimed at coexistence with the regional community.
- In order to achieve these targets, we will strive to make ongoing improvements to our environmental management system.

Global Eco Vision 2020

To promote environmental conservation activities, we set a medium-term Eco Vision. The ongoing Global Eco Vision 2020 was started in FY2016 and set forth four priority issues related to “natural resources,” “global warming,” “toxic, hazardous chemicals” and “key quality (development of environmentally friendly products).” We are tackling these issues through business activities, creating platforms for education (awareness raising), compliance and open communication, and aiming to enhance our manufacturing capabilities, increase our brand value and promote the sustainable development of our business as well as society at large.

We are preparing the next Eco Vision to start in FY2021.



Environmental Action Plan

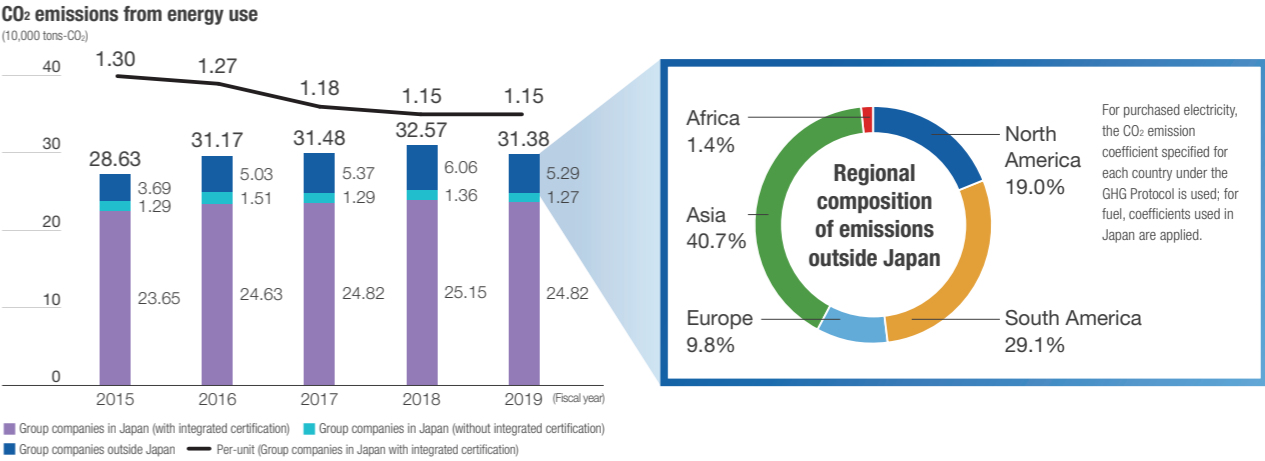
Major item	Minor item	Targets for FY2020	Results for FY2019
Global warming	Production	Reduce per-unit CO ₂ emissions by 15% relative to FY2015* * We revised the target upwardly on April 1, 2018.	Target: Reduce per-unit CO ₂ emissions by 13.0% relative to FY2015 Result: Reduced per-unit CO ₂ emissions by 12.8% relative to FY2015 We continued to conduct cross-departmental activities under the leadership of the energy conservation working group.
	Logistics	Increase efficiency for logistics	Carried out company-wide activities to increase logistics operations efficiency.
Depletion of resources	Waste	Reduce defective products to reduce waste Design products in consideration of waste reduction	Decreased waste by reducing defective products in each process.
	Water	Use water more efficiently	Increased water usage efficiency by improving operational conditions of facilities using water.
	Raw materials	Design products in consideration of the saving of raw materials	Promoted reduction of raw materials input by redesigning products and processes.
Environmentally friendly products	—	Build an environment-friendly product certification system and expand the lineup of such products	· Implemented measures to enhance the environment-friendly product lineup by developing next-generation products and improving the efficiency of existing products. · Started to develop a company-wide environment-friendly product certification system.
Hazardous chemical substances	—	Ensure compliance with ELV, RoHS, REACH and other regulations	Promoted cross-departmental information sharing and measures to meet regulations under the leadership of the chemical substances management working group.
	—	Foster the replacement of substances of concern with substitutes	Replaced phthalic acid, which will be prohibited by RoHS from 2019, with a substitute.
	—	Totally discontinue the use of HCFCs	Continued the replacement of air conditioners in which fluorocarbon R22 was used as a refrigerant.

Response to Climate Change

NGK SPARK PLUG Group set its per-unit CO₂ emissions reduction target in its Global Eco Vision 2020 as part of efforts to reduce greenhouse gas emissions, a factor contributing to climate change. To attain this target, we are striving to diminish our energy usage.

In FY2019, we posted per-unit CO₂ emissions of 1.15 tons/million yen for Group companies in Japan (with integrated certification), which fell short of the target of 1.13 tons/million yen for the year (down 13% from the FY2015 level). This was primarily related to the need to keep factory lines running even when production of our major products decreased as the global economy slowed due to an impact of US-China trade friction. To make up for the delay in achieving the target, additional efforts were exerted chiefly through improving compressed air and air conditioning usage, but only to the extent that it was almost successful. The Group's total CO₂ emissions decreased year on year to 310,000 tons in FY2019.

We will continue promoting various measures toward a new target set under the next Eco Vision starting FY2021 to reduce CO₂ emissions by 30% from the FY2018 level by FY2030.



Support for the TCFD Recommendations

In July 2020, NGK SPARK PLUG Group announced its support for the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. As such, we will examine the impact of climate change on our Group's business, strategies and finance within the company-wide risk management framework, and these topics will be discussed at the Risk Management Committee and the CSR and Sustainability Committee attended by the entire board of directors. We will also promote voluntary and proactive disclosure of information in accordance with the recommendations.

Development of Environmentally Friendly Products

We design, develop and provide environmentally friendly products so as to reduce the environmental impact of products on a life cycle basis. Specifically, when developing new products and changing specifications, we ensure that no substance of concern will be included and energy- and resource-saving design standards are met, and take appropriate measures as necessary.

Such efforts have been pursued over the years to offer a broad lineup of environmentally friendly products. To promote and expand the lineup, we have started new initiatives, including: setting out to create our own environmentally friendly product certification system; setting new targets up to FY2030 for spark plugs and automotive oxygen sensors that contribute to higher fuel efficiency and cleaner exhaust gas, our foremost environmentally friendly products and target items selected in association with our Priority Issues; and establishing the goal of facilitating adoption of our proprietary lead-free piezoelectric ceramics to replace conventional lead-based equivalents that are commonly used in many consumer appliances and are thus giving rise to concerns over the material's adverse effects on the environment and human health.

Environmental burdens from business activities (FY2019)

INPUT		Scope covered*1			
		NGK SPARK PLUG	Group companies in Japan*2	Group companies overseas*3	
Raw materials	Ceramic and metal materials Ceramic and metal materials purchased 53,000tons	○	○	○	Suppliers
Energy	Electricity Used in offices and plants 454,180MWh	○	○	○	Research, Design, Manufacturing, Sales
	City gas Used in offices and plants 11.34million m³	○	○	○	
	LPG Used in offices and plants and for testing, travel and transportation 7,253tons	○	○	○	
	Other fuels Used in offices and plants and for testing, travel and transportation 8,234kL (crude oil equivalent)	○	○	○	
	Renewable energy Generated by solar power generators and small hydroelectric generators 280MWh	○	○	○	
Water	Tap water, well water, river water Tap water, groundwater and river water used 1,480,000m³	○	○	○	Products
Chemical substances	PRTR Handled and notification given by sites 766tons	○	○		
Logistics	Fuels used for transportation (outsourced) Used for transportation by trucks, ships and aircraft 965kL (crude oil equivalent)	○	○		Logistics
					Customers
					Product shipment
					Customers
OUTPUT		Scope covered*1			
		NGK SPARK PLUG	Group companies in Japan*2	Group companies overseas*3	
Output into water	Wastewater Released into sewerage systems and public waters (consumption volume of tap water and well water) 1,480,000m³	○	○	○	
	Chemical substances (PRTR) Released into waters and notification given by sites 1.7tons	○	○		
Output into air	Greenhouse gas emissions Energy-based and non-energy-based greenhouse gas emissions 310,000tons-CO₂	○	○	○	
	Chemical substances (PRTR) Released into air and notification given by sites 86tons	○	○		
Waste	Waste generated (and treated on commission) Total 21,874tons				
	Effectively used (including waste sold) 19,212tons	○	○	○	
	Not effectively used 2,662tons				
Logistics	CO₂ emitted by external transporters CO₂ emissions due to externally commissioned transportation 2,567 tons-CO₂	○	○		

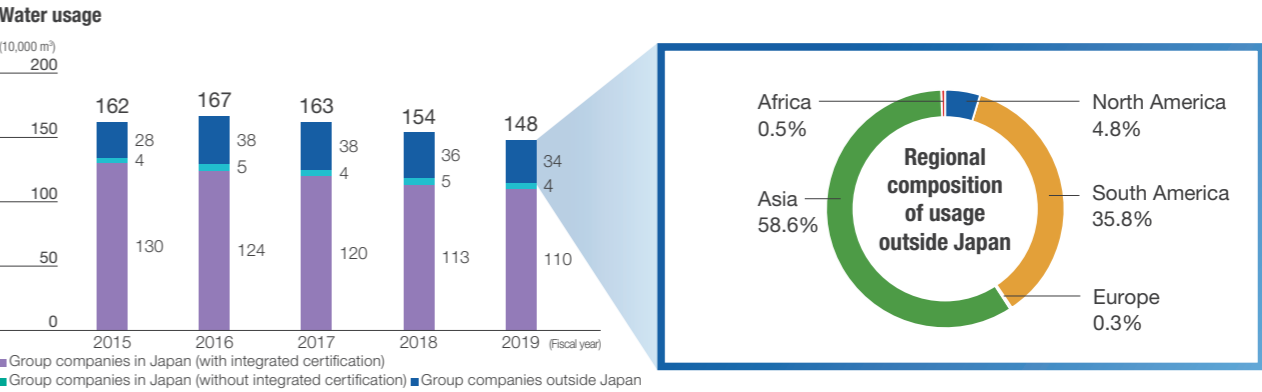
*1The covered scope of each amount reported in INPUT and OUTPUT is indicated with ○.

*2 Group companies in Japan: (subject to integrated certification) NITTOKU ALFA SERVICE CO., LTD., CERAMIC SENSOR CO., LTD., NTK CERAMIC CO., LTD., CERAMIC SENSOR NAKATSUGAWA CO., LTD., NANSEI CERAMIC CO., LTD., KAMIOKA CERAMIC CO., LTD., Spark Tec WKS CO., LTD., NICHIIWA KIKI CO., LTD., Spark Tech TONO CO., LTD.; (not subject to integrated certification) NITTOKU DENSHI CO., LTD., NTK CERATEC CO., LTD.

*3 Group companies overseas: (manufacturing & sales organization) NGK SPARK PLUG (SHANGHAI) CO., LTD., CHANGSHU NGK SPARK PLUG CO., LTD., NTK TECHNICAL CERAMICS KOREA CO., LTD., NGK SPARK PLUGS (THAILAND) CO., LTD., SIAM NGK SPARK PLUG CO., LTD., NGK SPARK PLUGS (ASIA) CO., LTD., NGK SPARK PLUGS MALAYSIA BERHAD, PT NGK BUSI INDONESIA, NGK SPARK PLUGS (INDIA) PVT. LTD., NGK SPARK PLUGS (U.S.A.), INC., Wells Vehicle Electronics, L.P., CERAMICA E VELAS DE IGNICAO NGK DO BRASIL LTDA., NGK SPARK PLUGS (FRANCE) S.A.S., NGK SPARK PLUGS SA (PTY) LTD; (sales organization) TAIWAN NGK SPARK PLUG CO., LTD., NGK SPARK PLUGS (VIETNAM) CO., LTD., NGK SPARK PLUGS (PHILIPPINES), INC., NGK SPARK PLUG (AUSTRALIA) PTY. LTD., NTK TECHNOLOGIES, INC., NGK SPARK PLUGS CANADA LIMITED, BUJIAS NGK DE MEXICO S.A. DE C.V., NGK SPARK PLUG EUROPE GmbH, NGK SPARK PLUGS (UK) LTD., LIMITED LIABILITY COMPANY NGK SPARK PLUGS (EURASIA), NGK SPARK PLUG MIDDLE EAST FZE.

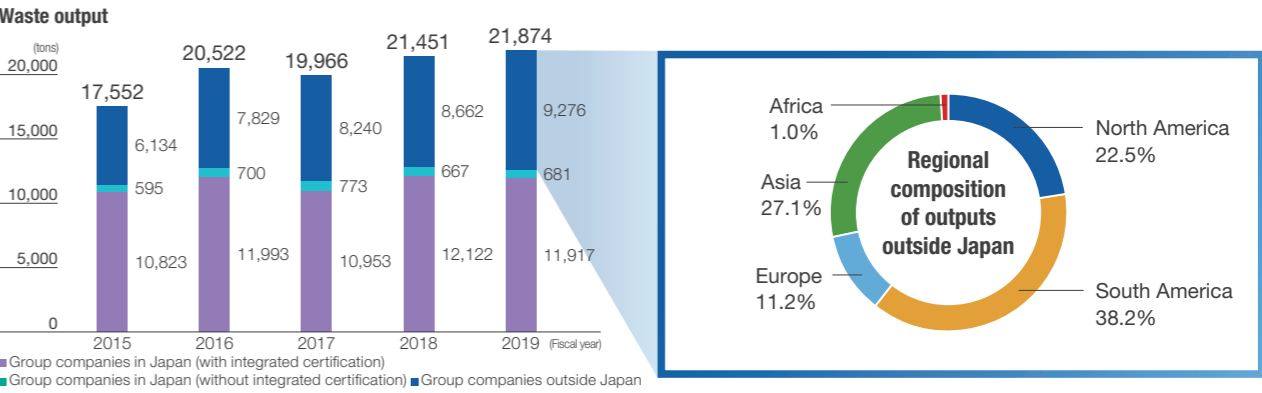
Conservation of water resources

Total water used in FY2019 declined 4.0% year on year to 1.48 million m³, mainly owing to changes in production.
We will continue to review our operations to promote the efficient use of water.



Reduction of Waste

The total amount of waste generated in FY2019 increased 2.0% year on year to 21,874 tons, mainly due to an increase in waste from manufacturing processes related to preparation for expanded production of some products.
We will continue to improve our operational processes, in an effort to reduce waste and promote recycling.



Hazardous Chemical Substances Management

To ensure compliance with Hazardous Chemical substances regulations, which are becoming increasingly strict in recent years, we have introduced a hazard ranking system. Hazardous Chemical substances are ranked according to the level of regulation and toxicity, with handling standards set for each rank. To ensure that our products will contain no substance of concern, suppliers' involvement is essential. Thus, we ask our suppliers to avoid restricted chemical substances listed in our green procurement guidelines. Also, we appropriately respond to inquiries from our customers regarding chemical substances contained in products, with participating in surveys and submitting a declaration of non-use of restricted chemical substances along with relevant data.
We will reduce the use of such chemicals by replacing them with alternative substances while reinforcing management of materials used in products in order to ensure legal compliance and meet the requirements of customers.

Biodiversity conservation

Recognizing the conservation of biodiversity as a critical global challenge, NGK SPARK PLUG Group identifies it as a material environmental issue for us to address, along with global warming mitigation and resources recycling. Based on this view, we established the NGK SPARK PLUG Group Biodiversity Action Guidelines in April 2013. Using the guidelines as a guide, we are working to remain aware of the fact that our activities, particularly involving energy and resource usage, are inevitably causing impacts on biodiversity, and are taking appropriate measures to reduce such impacts throughout our business operations, in cooperation with business partners and external groups.

Human Resources Development for Sustainable Growth

Human Resource Policy

We acknowledge that employees are the most important management resources. In light of this, we respect the diversity and individuality of our employees and promote the cultivation of physically and mentally healthy human beings, striving to promote the further development of our group as a whole.

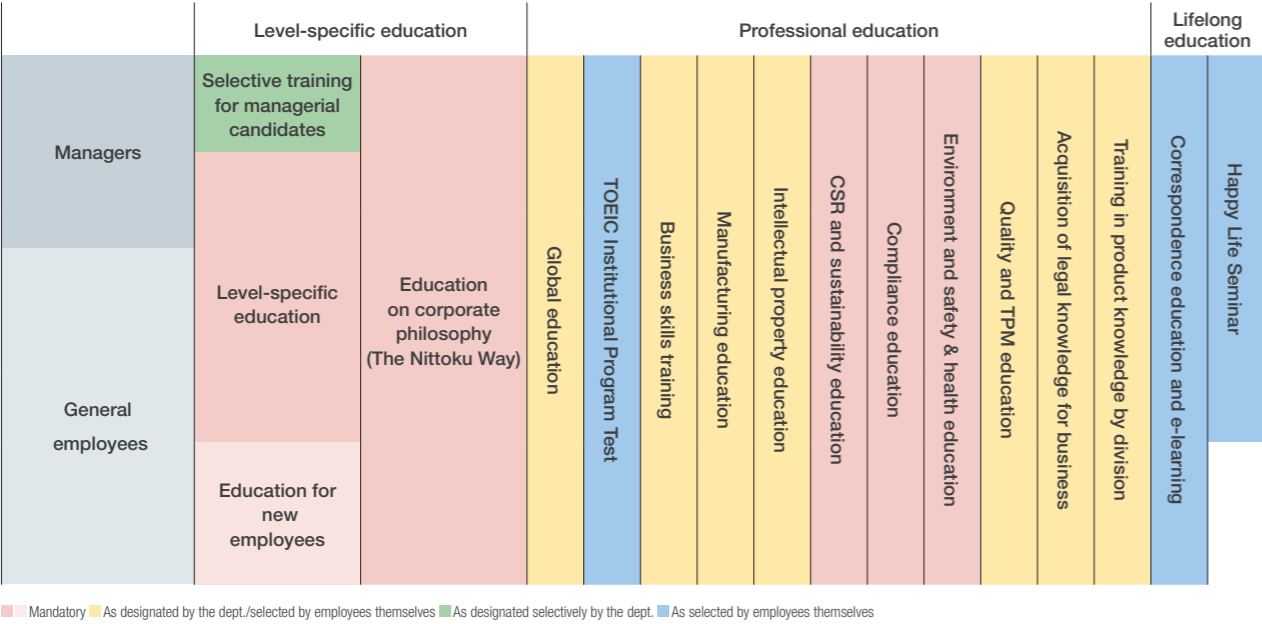
Action Guidelines

- We secure and foster human resources who help pass down our “Quality Product” and “Participation by all” principles to the following generations. To this end, we provide learning opportunities and other programs to support the career development of all employees.
- We strive to nurture a corporate culture that ensures that people with different qualities can fully realize their own capabilities within our group.

Continuous education and training activities

Based on the Four Shared Values of the Nittoku Way (Shisei-Shinjitsu, Dokuritsu-Jiei, Shikai-Keitei and Soshi-Kantetsu) and on the “Quality Product” and “Participation by all” principles, we conduct education and training activities in a planned manner to continuously develop employees who can boldly deal with challenging internal and external changes as well as those with high levels of expertise.

Our education and training activities consist mainly of OJT (on-the-job training), through which employees can acquire technologies and knowledge through their hands-on work. We also offer OFF-JT (off-the-job training), providing employees with new technologies, knowledge and skills outside their respective workplaces. We have a wide range of OFF-JT programs that include training by organizational level and role to provide necessary knowledge and skills, product quality education, environment and safety & health education, manufacturing education, education in global business, and career development support. In FY 2019, a total of 8,192 employees received OFF-JT.



Employee satisfaction survey

In order to grasp the Group’s situation and challenges and make improvements, we have been conducting an employee satisfaction survey targeting employees of NGK SPARK PLUG and Group companies in Japan.

For the FY2019 survey, the response rate reached 90.9% and the satisfaction rate 54.1%. Each departmental head is working on improvement based on the understanding of the department’s situation and challenges indicated by the survey results.

Promoting empowerment of women

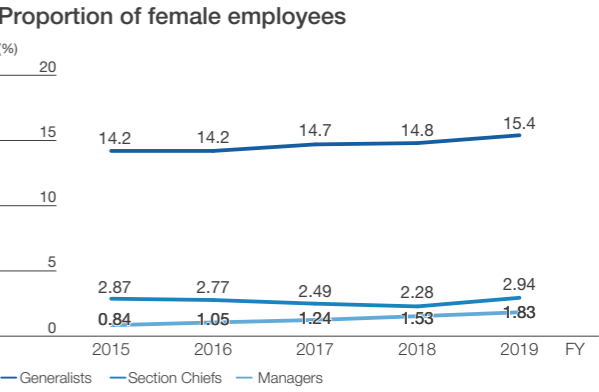
Since 2013, as our first step toward diversity promotion, we have been putting effort in creating working environment across the company where women can truly thrive and play active roles. We are trying to change the mindset of both managers and female employees themselves, regarding the empowerment of women as a driver for the reform of our corporate culture.

For example, we implemented a training program to help female employees develop their careers with higher motivation. In the program, these employees were paired with managers able to advise them as they sought to meet the challenge of fulfilling certain tasks with a higher level of difficulty than their routine assignments, thereby supporting

the growth of the participating female employees. We have also held lectures and training seminars for all managers so that they can deepen their understanding of diversity management. Moreover, across NGK SPARK PLUG and Group companies in Japan, the departmental heads led the formulation of action plans appropriate for their own departments and the departments that excelled in implementing the plans received incentive awards. The action plans target measures for diversity in general, not limited to those for the empowerment of women. We are also working to expand our systems to provide workplaces where female employees can work with greater comfort.

In addition, as a positive action, we are providing special education to female employees who aim to become managers, including mentoring by executives.

Going forward, we will implement more measures to increase the percentage of female managers.



External commendation for the empowerment of women

- Granted Kurumin certification (for FY2020)
- Selected to be a Nadeshiko Brand company (for FY2018)
- Certified by Aichi Prefecture as an “Aichi Josei Kagayaki Company (Company Supporting Aichi Women’s Career Success)” (for FY2018)
- Included in “New Diversity Management Selection 100” by the Ministry of Economy, Trade and Industry (for FY2017)
- Granted Eruboshi two-star certification based on the Act on Women’s Participation and Advancement in the Workplace (for FY2016)
- Granted the 2015 Japan Productivity Center Incentive Award Empowerment Grand Prix for Activities by Women
- Received the 2014 Excellence Award, Nagoya City Accreditation and Commendation System for Companies that Promoted Increased Roles for Women

Providing workplaces where employees can continue to exert their abilities

The growth of employees leads to the sustainable growth of the company. Based on this recognition, we are working to provide employees with workplaces where they can choose the right career for themselves, enhance their expertise and skills, and continue to make a meaningful contribution.

For example, we launched the Platinum Project targeting

employees who are aged 60 and above, also known as the “platinum generation,” to ensure that employees who wish to remain in the workforce after reaching the retirement age can continue to use their skills.

In the Platinum Project, we hold various seminars and provide information through an e-zine.

Establishment of a career consultation helpline

Through this contact, employees who have a national qualification for career consulting respond to calls for advice about career vision, work motivation, life events, etc. The career consultants do not provide solutions but instead help the questioners find answers for themselves.

Promoting the use of “My Career”

As a tool to help employees to look back on their past, set their future vision and commit themselves to achieving the vision, we use “My Career.” Employees biannually input information about their career to date and their future aspirations into “My Career,” which their managers then refer to in interviewing them to support their career development.

Diversification of the work styles of the platinum generation

Some employees in the platinum generation are eager to work but do not have confidence in their physical stamina. In response, at some of our plants we have begun to exempt such employees from the night shift upon request, with other employees working at night instead.

Putting focus on the employment of new graduates with foreign nationality

We are promoting the employment of foreign nationals in our effort to adapt to the rapid progress of globalization in the area of human resources. For new graduates, we have been employing at least three foreign nationals every year, recently with a special focus on the employment of foreign nationals who have studied the Japanese language at overseas universities and want to work in Japan, in addition to those who have studied in Japan. We are also fostering the mid-career employment of foreign nationals and employed a foreign national to head the Global Innovation Div., which we newly established in FY2020. With these non-Japanese employees, including both engineers and office personnel, demonstrating their abilities at our workplaces, we can increase our diversity awareness across the company.

Work style reforms

Our work style reforms used to be operational reforms, and in FY2019 we began making examinations for “genuine work style reforms.” At present we define “genuine work style reforms” as those that lead to higher productivity of individuals, for which we deem it necessary to enhance three elements: willingness to work (motivation and comfortable workplaces); ability (knowledge and experience); and methodology (management by objectives and by time). Also, we think it is necessary to review the entire human resources system, including the organization, evaluation and management, and, accordingly, we are implementing extensive measures not limited to those to provide employees with more work style options.

As for telecommuting, the necessity of which has been reaffirmed amid COVID-19 crisis, we have already introduced a work from home system and satellite offices, and are further improving the environment for telecommuting while reviewing our past work methods, aiming to make our workplaces even more adaptive to changes in society and the environment.

Efforts to maintain and improve employees’ health

NGK SPARK PLUG regards the health of employees as one of its important managerial resources for sustainable corporate growth and is fostering the health of individual employees for “health and productivity management.” In December 2017, we made a declaration on health and productivity management as the entire NGK SPARK PLUG Group and are implementing preventive and other measures against lifestyle-related diseases, mental disorders and passive smoking to proactively support the health of employees.



Prevention of lifestyle-related diseases

To help employees maintain and promote their health, we task industrial physicians, medical doctors and nurses with following up with employees who have been found to have problems as a result of undergoing health checkups. Such employees are also referred to appropriate medical institutions as needed. Moreover, we provide employees with a smartphone app, which is linked with the internal health management system, and employees are using the various functions of the app to promote their health.



Enhancing mental healthcare

We carry out stress checks on employees to prevent them from suffering mental disorders due to stress. Based on the results, we analyze the influence work environments have on employees in our effort to provide them with safe and comfortable workplaces.

Prevention of passive smoking

NGK SPARK PLUG has declared that it will totally ban smoking on the premises of all its sites in and after April 2023. Toward this goal we have been gradually limiting smoking hours as well as giving support to those who want to quit smoking, such as by referring them to smoking cessation clinics.

Development and management of managerial human resources

As we expanded our business globally, in 2016, we started a program to find and develop the next generation of global managerial human resources, targeting all Group companies.

This program is intended to facilitate the employment and promotion of candidates regardless of nationality and to provide them with opportunities and environments that allow them to demonstrate their abilities. It was named the “HAGI Program” after Hagi City in Yamaguchi Prefecture, where the Shoka Sonjuku school developed diverse human resources at the end of the Edo period. Chairman Shinichi Odo serves as the head of the program. Under the program, seminars have been held on a continuous basis to provide employees with opportunities to learn together with a focus on gaining a big picture view encompassing the entire company. We are thereby developing leaders with the will and sense of mission required to take the NGK SPARK PLUG Group into the future.

Targeting human resources in Japan, we run Nittoku Business School classes for employees who are almost qualified to participate in the HAGI Program. For these classes we have prepared a curriculum that helps participants develop logical thinking and acquire knowledge and skills regarding management strategies, marketing and presentations. It also includes case studies based on actual examples and is intended to help participants to develop the spirit, techniques and physical stamina required of leaders.

Employees who have completed the HAGI Program and the Nittoku Business School curriculum have already been making contributions in core positions within the Group.

We have also established a selective human resources development program for each of North America, Europe, Asia and other regions and implement the program four times a year for the local development of business leaders.

Moreover, in order to visualize the personal histories and skills of employees who are candidates to become business leaders, we have collected information about NGK SPARK PLUG’s managers and executives of overseas Group companies for input into our human resource databank, which is used in discussions by the Human Resources Committee. This committee is composed of the members of the management team and has been meeting monthly since FY2018. At the meeting the members discuss personnel affairs regarding core positions and work to place the right person in the right job for total optimization.

Development of managers

For the development of managers, we provide them with opportunities to review their past management approaches and observe the situation of their respective workplaces in an objective manner.

Implementation of a 360-degree survey

We implemented a 360-degree survey targeting departmental managers and those in higher positions in FY2018, and we will expand the survey target to include sectional managers and those in higher positions in FY2020.

In the survey, we examine leadership qualities of the respondents, including progressiveness, intelligence and sense of responsibility, as well as negative attributes that might hinder them from demonstrating their leadership, such as being avoidant. The survey results reveal the gaps between what the surveyed individuals think about themselves and what others think about them. We give feedback to the respondents to help them become aware of the importance of “observing” themselves.

Use of an indicator to visualize workplace engagement

Along with the “one-on-one meeting,” which we introduced on a trial basis in FY2019 to foster dialogue between managers and their subordinates for the development of workers able to work autonomously, we have also introduced a quantitative indicator as a tool to visualize workplace engagement. This engagement indicator numerically shows the level of employees’ eagerness to contribute to their organizations and jobs, and is designed for use by line managers to check the management level of their workplaces.

Respect for Human Rights

Human Rights Policy
<p>Based on the Universal Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, the UN Global Compact, and the UN Guiding Principles on Business and Human Rights, we understand the need to respect the human rights of all people who are affected by our business activities and will make our best effort to protect the dignity of these people.</p>
Action Guidelines
<ul style="list-style-type: none">• We do not discriminate against people or infringe upon their human rights based on race, ethnicity, religion, nationality, place of birth, social status, belief, age, disabilities, physical features, gender, sexual orientation and others.• We do not use child labor or forced labor.• We do not engage in harassment including sexual harassment and power abuse.• We identify the negative impact that we could have on human rights through our business activities and try to prevent or reduce such impact.• In the event of direct or indirect violation of human rights, we protect the victims through appropriate investigations and responses.• We promote education and enlightenment so that this policy is understood and implemented throughout our business activities.

Efforts to protect human rights


In 2012 we issued the Compliance Guidebook to set out our guidelines on respecting human rights and prohibition of harassment and have since been distributing copies to employees and others to educate them about compliance. Subsequently, in 2016, we signed the UN Global Compact and since then we have been creating more opportunities to provide education and information on human rights to our employees to raise their awareness. We have recently included LGBT-related issues in the items covered in our human rights-related training and are also monitoring the occurrence of racial problems around the world.

Harassment at the workplace can include harassment related to pregnancy, childbirth, childcare leave and long-term care leave, bullying, and mobbing, as well as sexual harassment including that directed against people of the same gender and in relation to sexual orientation or identity. We have set measures to prevent these types of harassment and the rules to be followed by all employees and others and are working for prevention based on labor-management cooperation.

We offer consultation services to people facing harassment through the contact point jointly established by labor and management at each of our plants and via the Corporate Ethics Helpline. We also conduct a compliance survey in order to grasp the situation at our workplaces. The details of consultations held and the issues reported through the contacts are promptly examined and the facts checked by the Anti-Harassment Committee, which then takes corrective action and gives instructions as needed.

Moreover, to ensure respect for human rights across our supply chain, we ask suppliers to prohibit child labor, forced labor, harassment and discrimination and to make appropriate responses to conflict minerals through our CSR Procurement Guidelines.

 Corporate Ethics Helpline⇒P.87

<p>Participation in the United Nations Global Compact</p> <p>NGK SPARK PLUG Group participated in the UN Global Compact in November 2016.</p> <p>The Global Compact sets out the voluntary action principles to be followed by companies. This initiative was proposed by Kofi Annan, the then secretary-general of the United Nations, in 1999 to address various issues facing the world, such as global warming, environmental problems and disparities in society. It was officially launched at the UN Headquarters in July 2000. In order to contribute to creating a sustainable society, the Group will conduct a range of activities as a good corporate citizen, supporting the Global Compact's 10 principles set in the four areas of "human rights," "labor," "environment" and "anti-corruption."</p>	
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Proper procurement

Procurement Policy
<p>We aim to realize globally optimal procurement based on our quality products principle. To this end, we focus on strengthening cooperation with suppliers and promoting our CSR efforts throughout our supply chain system, while at the same time striving to carry out proper purchasing transactions when procuring materials and parts, based on the following guidelines.</p>
Action Guidelines
<ul style="list-style-type: none">• We conduct rational transactions based on fair, transparent, and open competition.• We comply with procurement-related laws and regulations and foster responsible procurement. We select suppliers based on comprehensive assessment of product quality, technology, prices, deliveries, CSR initiatives, and efforts to continuously make improvements.• Aiming to procure more eco-friendly products, we strive to promote our green supplier system.• We enhance mutual trust with our suppliers, who are good partners for us, and strive to realize mutual development.

Promoting responsible procurement

NGK SPARK PLUG Group is fostering the responsible procurement of materials and others, giving due consideration to human rights and the environment across its supply chain.

<p>Promoting CSR-oriented procurement</p> <p>To foster CSR measures across the supply chain, we issued our CSR Procurement Guidelines and have been distributing copies to suppliers, asking them to comply with the rules set in the Guidelines for the following seven areas: human rights and labor; occupational health and safety; environment; fair trading and ethics; product quality and safety; information security; and contribution to society.</p>	<p>environmentally hazardous substances.</p>
<p>Ensuring green procurement</p> <p>In order to reduce our environmental impact throughout the supply chain, we issued the Green Procurement Guidelines to request that suppliers build environmental management systems and ensure the strict management of</p>	<p>Measures against conflict minerals</p> <p>There are concerns that some mineral resources mined in the Democratic Republic of the Congo and surrounding countries provide a source of funding to local armed forces, thereby promoting conflicts and infringements of human rights. This issue of conflict minerals is recognized as a serious social issue in relation to the procurement of resources and materials.</p> <p>Accordingly, we annually conduct surveys on the use of conflict minerals targeting the upstream section of our supply chain and avoid the use of any with related risks.</p>

Activities to support suppliers

By conducting activities to help suppliers enhance their business foundation and engaging in follow-up activities after our regular evaluation of them, we make joint efforts for improvement with suppliers, thereby building greater trust.

<p>1 Activities to help suppliers enhance their business foundation (through classroom seminars and practical seminars held on-site)</p> <p>For suppliers, we organize classroom seminars on themes such as process improvement, QC, occupational health & safety and the environment and also hold practical seminars at their own manufacturing facilities to foster improvements. We have been conducting these activities to help suppliers develop their workers in order to build a more robust business foundation. In FY2019 we held a total of 34 such seminars. We are thus implementing our "Quality Product" policy and improving our manufacturing abilities in cooperation with suppliers.</p>
<p>2 Follow-up activities conducted after the regular evaluation of suppliers</p> <p>We annually conduct evaluation on some suppliers and inform them of the results. For suppliers that require follow-up activities, we visit them to provide targeted advice and inspect their sites in order to work with them in thinking about how to rectify any weak points.</p>

Relationship with Stakeholders

Communication with stakeholders

To deepen mutual understanding, we are fostering dialogue with our stakeholders through various opportunities.

Stakeholder	Communication	Major activities in FY2019	Frequency & no. of participants per year
Shareholders and investors	We disclose information in compliance with the law and also disclose information promptly via the media and at our website.	● Organization of the ordinary general meeting of shareholders	Jun.
		● Dialogue with institutional investors and securities analysts	336 times
		● Organization of briefings on our technologies for institutional investors and securities analysts	Not held
		● Organization of briefings on the company for personal investors	Three times (900 people in total)
		● Publication of the newsletters for shareholders	Once
		● Publication of an annual integrated report	Aug.
		● Provision of information via the website	From time to time
Customers	We offer information meaningful to customers at our website and through exhibitions so that they can purchase and use our products and services with peace of mind.	● Communication through sales activities	From time to time
		● Provision of information via the website (on products, events, etc.)	From time to time
		● Explanation about products and technologies at exhibitions	From time to time
		● Communication at venues of events, such as racing events	From time to time
Suppliers	We are working to build relationships of trust with suppliers as their sound partner and achieve growth together. To this end we conduct activities across the supply chain, such as holding briefing sessions on our corporate policies.	● Communication through daily procurement activities	From time to time
		● Organization of briefings on the corporate principles	May
		● Organization of seminars on practical issues	34 seminars
Local communities	We respect the local culture and customs at each of our bases located across the world and work for smooth communication with local communities. We also participate in various social contribution activities to help create a comfortable society as a corporate citizen.	● Communication through social meetings and events	From time to time
		● Participation in local events such as festivals	From time to time
		● Local cleanup activity	From time to time at each plant (931 people in total)
		● Hosting environment-related plant tours	From time to time at each plant (867 people in total)
		● Social meetings on the environment	From time to time at each plant (302 people in total)
		● Communication through cultural and sport events	
		・ 2020 NGK SPARK PLUG Suzuka 2&4 Race	Cancelled due to COVID-19
		・ NGK SPARK PLUG FC Gifu football class for children	Jun.
		・ Musical for families held in the NTK Hall	Dec.
		・ Marathon Festival Nagoya Aichi	Mar.
Employees	To maintain safe and sound workplaces and help employees work with vigor, the management team proactively visits work sites to have dialogues with on-site employees.	● Provision of information via the website (environmental information, etc.)	From time to time
		● Communication through daily operations and at workplaces	From time to time
		● Publication of an in-house magazine	Eight times in a printed form and from time to time on the website
		● Organization of various labor-management meetings	From time to time
		● Utilization of the corporate ethics helpline (for employees)	80 calls received
		● Organization of various training sessions	A total of 8,192 participants
		● Employee satisfaction survey	All employees in Nov.

Inclusion in SRI Indexes

NGK SPARK PLUG Group is included in the following socially responsible investment (SRI) indexes:



*The inclusion of NGK SPARK PLUG CO., LTD. in any MSCI index, and the use of MSCI logos, trademarks, service marks or index names herein, does not constitute a sponsorship, endorsement or promotion of NGK SPARK PLUG CO., LTD. by MSCI or any of its affiliates. The MSCI indexes are the exclusive property of MSCI. MSCI and the MSCI index names and logos are trademarks or service marks of MSCI or its affiliates.

Corporate Governance Interview with Outside Directors



Outside Directors
Morihiko Otaki

Outside Directors
Kanemaru Yasui

Outside Directors
Mackenzie Donald Clugston

Outside Directors
Miwako Doi

We will cocreate innovations by leveraging workers with diverse backgrounds and driving company-wide efforts to meet new challenges

Q. How is the diversity of the Board of Directors?

Otaki I have experience as a member of senior management at Japanese and foreign companies, and Mr. Yasui is an accountant. We also welcomed Mr. Clugston to the board last fiscal year, which made me feel that the diversity of the board got a tremendous boost. NGK SPARK PLUG earns about 80% of its sales overseas and foreign shareholders account for nearly 30%. To leverage our strengths accumulated in the course of expanding our global market presence in the automotive components business for developing new businesses, we need a broad global perspective. In this sense, because of Mr. Clugston's career as a diplomat, his view of the market from the standpoint of a citizen, and his values and way of thinking that differ from those of Japanese people, he can consistently provide us with fresh and valuable input.

Yasui Ms. Doi, who has a background as a researcher, joined the board this fiscal year, improving the balance in diversity even further. If the technical knowledge and experience of the four of us were mapped on a skill matrix, it would demonstrate that NGK SPARK PLUG is one of only a few companies that has a board composed of diverse individuals with different expertise.

Clugston Inside and outside directors are well-balanced in number. I have been an outside director of NGK SPARK PLUG for the past one and a half years, expressing my opinions mainly in the area of strategy development. The

needs of the global market differ significantly between developed countries and emerging markets. I will continue supporting the company's technological strength and actively present a perspective different from that of the Japanese directors.

Doi Meetings of the Board of Directors have an atmosphere that promotes the free and easy exchange of frank opinions. I visited the company's plants and, as a tech person myself, was fascinated by this very rare company that has been delivering a variety of components and operating business—both of which are centered around its core ceramics technologies—globally for more than 80 years. I think the company has great future possibilities. I'm looking forward to discussing with you at meetings how we can capitalize on the strengths of existing businesses to create innovation.



Q. What is your view on the 2030 Long-term Management Plan NITTOKU BX?



Yasui While the strengthening of existing businesses and the creation of new businesses were set as objectives in the previous NITTOKU SHINKARON long-term management plan ended in March 2020, the current NITTOKU BX plan clearly sets out numerical targets for the sales portfolio and investment in new and growth businesses. It is significant that the company has made it transparent how much it is going to invest in what and what results can be expected. To achieve these targets, the new plan aims at “establishing strong business infrastructures” as did the NITTOKU SHINKARON, but this time the plan entails “clarification of responsibilities and authority” and even a shift to an internal company system. The plan is so bold that I asked management, “Do you really need to go this far?” I felt the strong determination of management to achieve Dokuritsu-Jiei (take actions by oneself), a shared value manifested by The Nittoku Way, for each internal company and change the business portfolio in which internal combustion engine business currently represents 80% of total sales.



Otaki All the rest is depending on how much each employee can share the determination to achieve “change beyond recognition” themselves. The key is how they can break away from the mindset of an “ever-victorious” company with overwhelmingly dominant sources of revenue, namely spark plugs and sensors. The pharmaceutical industry, where I was working before, is said to have a high-risk high-return structure where drug development may result in failure to achieve expected results, no matter how much money and time are invested, or may turn out to lead to a big hit product

like a blockbuster* drug. As our company is to make inroads into new business domains, it may not always be the case that we can keep winning like a Yokozuna (top-ranking sumo wrestler). We may have to barely “hang in there” and survive with eight wins and seven losses. But we must continue on our challenging journey to produce a hit. What we must aim at is to build on small successes through trial and error and translate them into a big business over the medium and long term. To nurture a culture that encourages employees to engage in generating innovation, we also need to advance the diversity of our workforce as well as promote a shift in the mindset of existing personnel.

*blockbuster : A new drug with epoch-making medicinal properties, which has overwhelming sales compared to other products released in the corresponding disease area.

Clugston I agree. The company has specified four business areas on which it plans to focus. But under the current situation where we don’t know what will be a success, the company needs structural changes that will support bottom-up initiatives to take on wide-ranging challenges. To develop such a structure it is important, as stated in the NITTOKU BX, to adopt a rewards and evaluation system appropriate for the business environment. We should offer incentives to attract and actively hire talented researchers and other human resources from both Japan and abroad. Making the stance of “high rewards, high performance” a part of the corporate culture will also lead to the first step in the process of changing the organization for the better.

Doi To broaden the perspective in the expansion of the existing, highly profitable internal combustion engine business, it may be effective for the company to send personnel to emerging market countries with strong potential for demand growth so that they can feel out opportunities for new businesses there. Emerging markets, such as India, Brazil and African nations, differ greatly from each other in terms of lifestyles, growth models and needs. Drawing a future picture of NGK SPARK PLUG in various countries will give employees and the company a new perspective on marketing, with which we can explore the needs of not just B-to-B customers but also end consumers in post COVID-19 world and translate these needs to new businesses, and will thus be great asset to employees and the company alike.

Q. How do you evaluate NGK SPARK PLUG’s ESG efforts?



Clugston The company is leveraging its technological and development capabilities to contribute to solving social issues. One such example is the development of spark plugs, oxygen sensors and other products in compliance with environmental regulations, which leads to cleaner emissions and higher fuel efficiency of automobiles. These efforts are worthy of esteem. With regard to governance, increased diversity among outside directors, the plan to transfer the authorities and responsibilities of the global headquarters (GHQ) to the regional headquarters (RHQ) overseas and other initiatives demonstrate that the company has a culture open to diverse ideas and debate and that its challenge function is working. I feel that the company’s governance system is quite advanced compared with other Japanese companies.

Otaki NGK SPARK PLUG’s level of consciousness about

environmental issues is generally high. But one suggestion I want to make is that there should be a movement that, say, encourages employees to be more actively involved in nonprofits and other social contribution activities outside the company. The company has a somewhat inward-focused culture, so we could, for instance, encourage employees to take a volunteering holiday and actively participate in activities outside the company to hone their perspective.

Doi From the viewpoint of accelerating ESG efforts and pursuing a more outward-focused culture, I suggest that the company publicize its unique emissions cleaning technologies more actively. Such active publicity campaigns may include emphasizing how strongly the company is committed to social and environmental responsibility by showing on its website a car or cars equipped with its oxygen sensors in a country with severe emissions problems. By making what NGK SPARK PLUG does and how it contributes to society widely known, we can not only boost the company’s public profile but also motivate young employees with a strong “Will” to help solve social issues through their work.

Yasui As the Sustainability Promotion Department was established this fiscal year, I expect that the company’s initiatives will cover ESG issues more comprehensively and involve more employees, producing more specific results. As regards the reinforcement of governance, how we can monitor each internal company after the internal company system is introduced will become a new issue that needs to be addressed.

Q. What is your expectation for the NGK SPARK PLUG of the future? Please also tell us what you, as an outside director, aspire to do?

Otaki First and foremost, I want to see at least one new business come to fruition as soon as possible. It doesn’t have to be a huge success. Size isn’t everything. More important than size is impact on society and meaningfulness. I want the company to establish such a business. I want to make the most of the experience gained from my former jobs to assist the company, particularly in its efforts to foster a culture of willingness to meet new challenges.

Clugston Japanese people tend to fear failure. But there is no success without failure. We directors will also actively express our opinions without fearing failure to serve as a challenge function to vitalize debate.

Doi It is also important to set an “exit” plan when taking risks and trying to expand into new business domains. As outside directors, we need to closely and objectively watch the company’s R&D projects and determine to what extent

we can allow the company to take risks and when the company should stop a project and return it back to the starting point in case it goes awry. If a new business does not turn profitable, we don’t call it a failure as long as the company can exit from the business in a predefined manner. I want to assist the company in the development of the kind of system that allows young employees to make many attempts without fearing failure.

Yasui From that point of view just mentioned, one of the main roles we are expected to play is to monitor the progress of the company’s management plans and, if there is any factor that inhibits the plans, pose a question—from an objective standpoint as a third party—as to whether the company is taking any measure to eliminate such factor. This is an important role, and I want to fulfill it and contribute to the transformation of the company.

Management System

Directors (as of June 24, 2020)

Representative Director Chairman of the Board



Shinichi Odo

April 1977: Joined our company

February 2003: General Manager of Overseas Aftermarket Sales & Marketing Dept., Sales and Marketing Div., Automotive Components Gr.

July 2005: President, NGK SPARK PLUGS (U.S.A.), INC.

June 2007: Member of the Board,

June 2010: Member of the Board (Managing Director)

June 2011: President

April 2012: President & CEO

April 2016:: Representative Director & Chairman of the Board
President & Chief Executive Officer

April 2019: Representative Director Chairman of the Board (up to today)

Representative Director President
Chief Operating Officer



Takeshi Kawai

April 1987: Joined our company

February 2011: General Manager of Sensor Engineering Dept. II, Sensor Div., Automotive Components Gr.
Corporate Officer

April 2012: Managing Officer

April 2015: Member of the Board, Managing Officer

June 2015: Member of the Board, Managing Officer

April 2016: Member of the Board, Senior Managing Officer

April 2019: President & Chief Operating Officer (up to today)

Member of the Board (Outside Director)



Morihiko Otaki

August 1996: President & CEO, JOHNSON & JOHNSON K.K. VISION CARE COMPANY

August 2011: Vice Chairman of the Board, PASONA INC.

June 2013: Member of the Board (Outside Director), NGK SPARK PLUG CO., LTD. (up to today)

June 2016: Director, Henry Schein Japan K.K. (up to today)

August 2016: Vice Chairman, PASONA INC.

June 2018: Outside Director, GIGA PRIZE CO., LTD. (up to today)

June 2020: Outside Director, FP Corporation (up to today)*

* Assumed the position on June 25, 2020

Member of the Board (Outside Director)



Kanemaru Yasui

March 1981: Registered as a Certified Public Accountant

April 1999: Representative Partner, Central Audit Corporation

August 2007: Representative Partner, AZSA & Co. (currently KPMG AZSA LLC.)

June 2008: Managing Partner, Director of Nagoya Branch, AZSA & Co. (currently KPMG AZSA LLC.)
Retired from KPMG AZSA LLC.

June 2013: Retired from KPMG AZSA LLC.

July 2013: Director, Yasui Certified Public Accountant Office (up to today)

June 2014: Outside Director, NICHIIHA Corporation Member of the Board (Outside Director), NGK SPARK PLUG CO., LTD. (up to today)

Representative Director Member of the Board Executive
Vice President,
Assistant of President Global innovation Div.



Toru Matsui

April 1984: Joined our company

April 2011: President of NGK SPARK PLUG EUROPE GmbH

October 2013: General Manager of OEM Sales & Marketing Dept., Sales and Marketing Div., Automotive Components Gr.

December 2014: President of NGK SPARK PLUG (SHANGHAI) CO., LTD.

April 2015: Corporate Officer,

July 2016: President of NGK SPARK PLUG (SHANGHAI) TRADING CO., LTD.

April 2018: Managing Officer,

June 2018: Member of the Board, Managing Officer

April 2019: Member of the Board Executive Vice President

April 2020: Representative Director Member of the Board Executive Vice President (up to today)

Member of the Board Executive Officer,
Corporate Strategy
Gr. General Manager, Tokyo Branch Office



Mikihiko Kato

April 1985: Joined our company

February 2012: General Manager, Corporate Planning Dept.,

August 2012: President of CERAMICA E VELAS DE IGNICAO NGK DO BRASIL LTDA.

October 2015: General Manager, Corporate Planning Dept.,

April 2016: Corporate Officer

June 2017: Member of the Board, Corporate Officer

April 2019: Member of the Board Executive Officer (up to today)

Member of the Board (Outside Director)



**Mackenzie Donald
Clugston**

June 1982: Joined Department of Foreign Affairs and International Trade of the Canadian Government

August 2000: Canadian Consul General in Osaka

August 2003: Minister, Embassy of Canada in Japan

August 2009: Ambassador of Canada to Indonesia, Timor-Leste and the ASEAN

November 2012: Ambassador of Canada to Japan

June 2016: Outside Director, KAMEDA SEIKA CO., LTD. (up to today)

September 2016: Professor, Kwansei Gakuin University (up to today)

June 2017: Outside Director, Idemitsu Kosan Co., Ltd. (up to today)

March 2018: Outside Director, Sapporo Holdings Limited (up to today)

June 2019: Member of the Board (Outside Director), NGK SPARK PLUG CO., LTD. (up to today)

Member of the Board Executive Officer
Corporate R&D Gr.
Medical Div.



Takio Kojima

April 1984: Joined our company

February 2011: General Manager, of Next Generation Product Project, Product Planning Center, Engineering R&D Gr.

April 2012: General Manager, of Next Generation Product Project, New Business Advancement Gr.

October 2013: Deputy General Manager of R&D Center,

April 2014: Corporate Officer

April 2018: Managing Officer

June 2018: Member of the Board Managing Officer

April 2019: Member of the Board Executive Officer (up to today)

Member of the Board Executive Officer
Corporate Administration Gr. Secretarial Office
Plant Manager of Nagoya
President of NGK SPARK PLUGS (U.S.A.) HOLDING, INC.



Kenji Isobe

April 1986: Joined our company

July 2011: General Manager, of Accounting & Finance Dept.,

April 2013: General Manager, of Corporate Planning Dept. and Public Relations Office,

December 2015: General Manager, of Accounting & Finance Dept., Corporate Administration Group. and General Manager, of Public Relations Office

April 2016: Corporate Officer

June 2018: Member of the Board, of Corporate Officer,

April 2019: Member of the Board Executive Officer (up to today)

Member of the Board (Outside Director)



Miwako Doi

April 1979: Joined Tokyo Shibaura Electric Co., Ltd. (currently Toshiba Corporation)

July 2005: Senior Fellow, Corporate Research & Development Center, Toshiba Corporation

July 2008: Chief Fellow, Corporate Research & Development Center, Toshiba Corporation

April 2014: Auditor, National Institute of Information and Communications Technology, an Incorporated Administrative Agency (currently, a National Research and Development Agency) (up to today)

June 2015: Outside Director, Nomura Research Institute, Ltd.

April 2017: Executive Director, Nara Institute of Science and Technology (up to today)

June 2019: Outside Director, Isetan Mitsukoshi Holdings Ltd. (up to today)

April 2020: Vice President, Tohoku University (up to today)

June 2020: Outside Director, Subaru Co., Ltd. (up to today)

June 2020: Member of the Board (Outside Director), NGK SPARK PLUG CO., LTD. (up to today)

Member of the Board Executive Officer
Business Planning Management Div.
Technology Evaluation Office Manager



Hiroyuki Maeda

April 1986: Joined our company

February 2012: General Manager of Planning Control Dept., Sensor Div., Automotive Components Group.

April 2012: General Manager of Sensor Engineering Dept. II, Sensor Div., Automotive Components Group.,

April 2013: General Manager of Procurement Dept., Procurement Div.

April 2014: Deputy General Manager of Procurement Div., General Manager of Supplier Relations & Development Office, General Manager of Procurement Dept.

April 2016: Corporate Officer

April 2019: Executive Officer

June 2019: Member of the Board Executive Officer (up to today)

Audit & Supervisory Board Members (As of June 24, 2020)

Audit & Supervisory Board, Standing


Yasuhiko Hotta



April 1980: Joined our company
February 2008: General Manager, Accounting & Finance Dept.
November 2008: General Manager, Semiconductor Components Div., Communication Media Components Gr.
June 2009: General Manager, Planning Dept., Communication Media Components Gr.
February 2011: General Manager, Information Systems Dept.
July 2011: Senior General Manager
April 2016: Senior General Manager, Working Styles Reforming Office, Corporate Strategy Gr.
June 2017: Audit & Supervisory Board Member, Standing (up to today)

Audit & Supervisory Board Member, Standing


Yoshihiro Matsubara



April 1983: Joined our company
February 2012: General Manager, Production Engineering Dept., Spark Plug Div, Automotive Components Gr.
April 2012: General Manager, Spark Plug Production Engineering Dept, Production Engineering Center, Production Engineering Gr.
February 2014: General Manager, Equipment Dept., Production Engineering Center, Production Engineering Gr.
April 2014: Corporate Officer
April 2019: Corporate Adviser, Standing
June 2019: Audit & Supervisory Board Member, Standing (up to today)

Audit & Supervisory Board Member


Fumiko Nagatomi



April 1981: Registered as an attorney
April 1989: Opened Nagatomi Law Firm (up to today)
May 2006: Outside Auditor, UCS CO., LTD.
June 2016: Audit & Supervisory Board Member (Outside Corporate Auditor), Chubu Electric Power Co., Inc. (up to today)
June 2017: Audit & Supervisory Board Member, NGK SPARK PLUG CO., LTD. (up to today)

Audit & Supervisory Board Member

Akihiko Minato



April 1976: Joined The Mitsubishi Bank, Ltd.
June 2003: Executive Officer, The Bank of Tokyo-Mitsubishi, Ltd.
May 2007: Managing Executive Officer, The Bank of Tokyo-Mitsubishi UFJ, Ltd. (currently MUFG Bank, Ltd.)
June 2009: Managing Director, MARUNOUCHI YOROZU Co., Ltd. Outside Audit & Supervisory Board Member, The Nanto Bank, Ltd.
June 2010: Representative Director and Vice President, Mitsubishi UFJ Research and Consulting Co., Ltd.
June 2012: Outside Audit & Supervisory Board Member, Mitsubishi Materials Corporation
September 2016: Chairman, MST Insurance Service Co., Ltd.
June 2018: Audit & Supervisory Board Member, NGK SPARK PLUG CO., LTD. (up to today)

Executive/Corporate Officers (As of June 24, 2020)

Executive Officer
Noboru Ishida

Corporate Quality Control Div.
Fuel Cell Business
President of CECYLLS CO., LTD.
Plant Manager of Komaki

Executive Officer
Masaki Sumiya

Procurement Div.

Executive Officer
Hiroyuki Tanabe

Product Technology Div.
Facility Engineering Div.

Executive Officer
Hiroyasu Ogura

SCM Div.
Regional President ASEAN, India
President of NGK SPARK PLUGS (ASIA) CO., LTD.

Executive Officer
Akiyoshi Kato

Spark Plug Div.
Plant Manager of Miyanojo

Executive Officer
Koji Suzuki

Automotive Components Sales & Marketing Div.
Aftermarket Div.

Executive Officer
Yoshiyuki Takayanagi

Medical Div.

Executive Officer
Osamu Shinkai

Industrial Ceramics Div.
Semiconductor Production Equipment Div.
President of NTK CERATEC CO., LTD.
Plant Manager of Ise

Executive Officer
Kazunobu Hasegawa

Regional President China
President of NGK SPARK PLUG (SHANGHAI) TRADING CO., LTD.
President of NGK SPARK PLUG (SHANGHAI) CO., LTD.

Executive Officer
Keiji Suzuki

Sensor Div.
Global Innovation Div.

Corporate Officer
Michael Alan Schwab

Regional President PAMA
President of NGK SPARK PLUGS (U.S.A.), INC.

Corporate Officer
Damien Germès

Regional President EMEA
President of NGK SPARK PLUG EUROPE GmbH

Corporate Officer
Takeshi Mitsuoka

Global Innovation Div.

Corporate Officer
Masakazu Ota

Cutting Tools Div.

Corporate Officer
Kazuyoshi Terashita

Global Group Governance Headquarters

Corporate Officer
Shigeki Mori

Product Technology Div.

Corporate Officer
Tsunejiro Tajima

Semiconductor Production Equipment Div.
President of NTK Technologies, INC.

Corporate Officer
Shingo Arimi

Facility Engineering Div.

Corporate Officer
Tomohiro Yamaguchi

Corporate Strategy Gr.
General Manager, Strategic HR & Corporate Planning Dept.

Executive Officers and Corporate Officers who are not directors

Corporate Governance System

Corporate Governance System Chart (as of June 24, 2020)

1

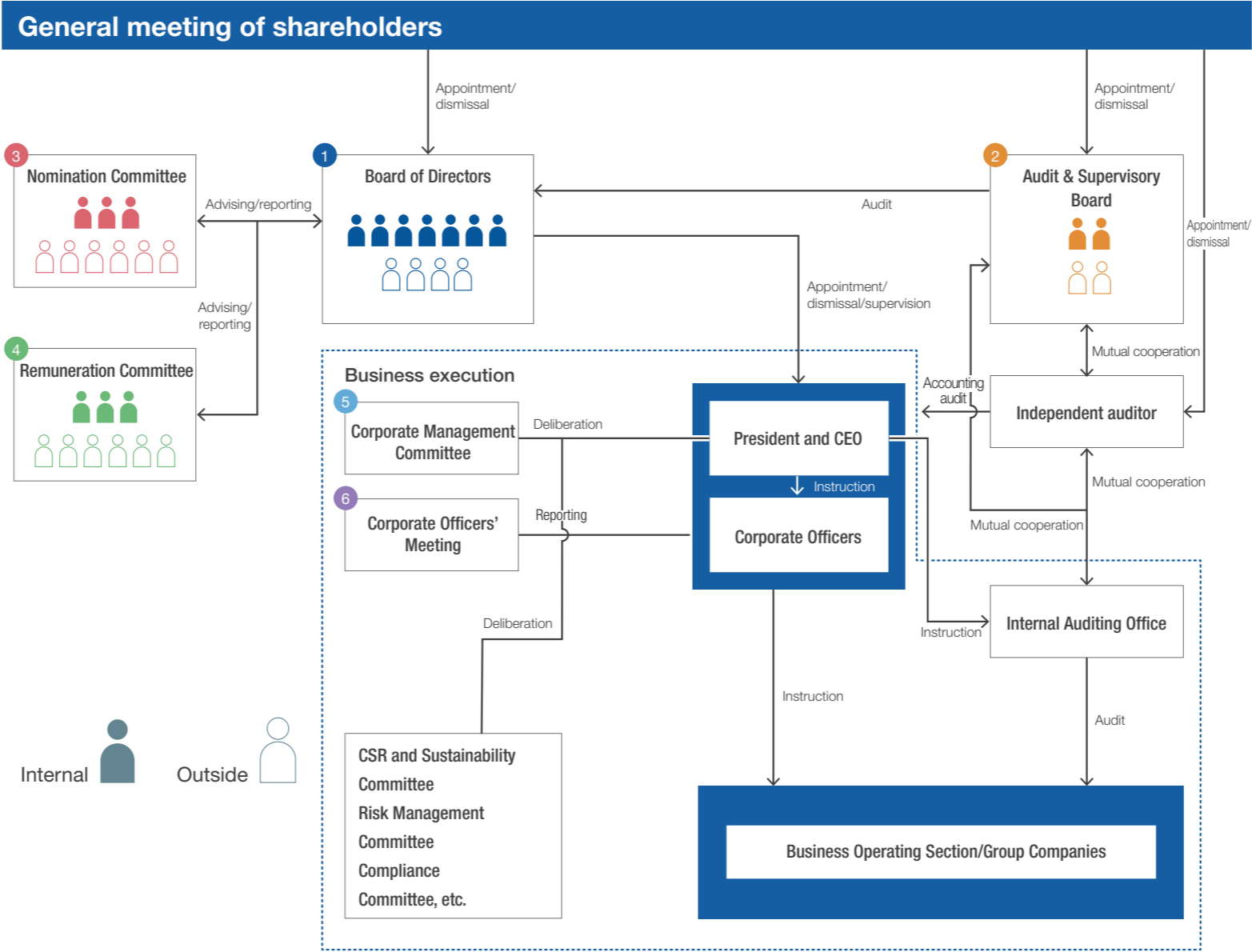
Board of Directors

The Board of Directors is composed of 11 directors, four of whom are outside directors. The Board meets regularly once a month and as required for deliberation and determination of issues as prescribed in applicable laws and regulations or articles of incorporation as well as other key managerial issues. The Board also supervises business execution, receiving reports from directors. Multiple independent outside directors have been invited to join to the Board to enhance its supervisory function and ensure management transparency.

2

Audit & Supervisory Board

The Audit & Supervisory Board is composed of four corporate auditors, two of whom are outside auditors. The Board audits the directors' business execution as an independent organization on the behalf of shareholders. Full-time auditors carry out audits based on their business experience in the company and outside auditors from a neutral and professional viewpoint, thereby ensuring sound business management.



3

Nomination Committee

Advisory body of the Board of Directors. Majority of its members are independent outside directors so as to ensure transparency and rationality for the nomination of director candidates. Consulted by the Board of Directors, this committee deliberates on the appointment of directors and corporate auditors that will be proposed at the general meeting of shareholders as well as on the evaluation of corporate performance and the results-based evaluation of the management team. The deliberation results are reported to the Board of Directors.

4

Remuneration Committee

To ensure reasonableness and transparency with regard to director nomination, a Remuneration Committee, in which a majority of the members are independent outside directors, was established as advisory bodies to the Board of Directors. Based on the Board of Directors' request for opinion, the Remuneration Committee deliberates on matters, including proposals on the appointment of directors and Audit & Supervisory Board members to be submitted to the General Meeting of Shareholders, the Company's performance evaluations and, based on such evaluations, evaluation of the management's performance, and then delivers its opinions to the Board of Directors.

Members of the Nomination and Remuneration Committees

Directors				FY2020	
Name		Nomination Committee	Remuneration Committee		
Shinichi Odo					
Takeshi Kawai					
Toru Matsui					
Mikihiko Kato					
Takio Kojima					
Kenji Isobe					
Hiroyuki Maeda					
Morihiko Otaki					
Kanemaru Yasui					
Mackenzie Donald Clugston					
Miwako Doi					

Auditors				FY2020	
Name		Nomination Committee	Remuneration Committee		
Yasuhiko Hotta					
Yoshihiro Matsubara					
Fumiko Nagatomi					
Akihiko Minato					

Basic information

As of June 24, 2020

Organizational design	Company with an Audit & Supervisory Board
No. of directors	11
No. of outside directors among total no. of directors	4
Term of directors	1 year
No. of corporate auditors	4
Outside auditors among total no. of auditors	2
Independent auditor	KPMG AZSA LLC

6

Corporate Officers' Meeting

We adopt the corporate officer system to foster business execution based on the policies set by the Board of Directors and clarify responsibility for the execution results. Corporate officers are selected by the Board and meet monthly to report on their business execution and to share information and exchange opinions in a cross-sectional way.

Basic Philosophy

In line with the corporate philosophy expressed in the slogan, “With established trust and confidence inside and outside the company, we aim to contribute to the peoples of the world by creating and putting at their disposal new values for the future,” we are enhancing the corporate governance system that we built to foster business management that will increase our corporate value on a medium- to long-term basis. Our basic philosophy on corporate governance is to promote fair and highly transparent management for our stakeholders, including shareholders, customers, suppliers, employees and local communities, and build relationships of trust with them, and to operate and further improve our management and internal control systems to achieve sustainable growth through efficient and sound management.

Chronological table of measures taken for corporate governance



Roles and Structure of the Board of Directors

The Board of Directors plays the following roles to help the company achieve sustainable growth and increase its corporate value on a medium- to long-term basis, thereby increasing its profitability, capital efficiency and others:

- Deliberates and makes decisions on the basic management policies, medium- to long-term management strategies and other important managerial issues
- Builds and improves the environment to help the management team take risks appropriately
- Supervises the management team in a highly effective manner from an independent and objective standpoint

The Board of Directors is composed of 11 directors, and includes four independent outside directors to

foster discussions from multifaceted viewpoints and ensure the transparency and objectivity of its decision-making. For the sustainable growth of the company and medium- to long-term increase of its corporate value, we regard it as important that the Board be comprised of a diverse group of individuals with different backgrounds (expertise, experience, etc.) and choose the members in a balanced manner from those who have abundant experience, tremendous insight and a high degree of professionalism in consideration of the current business environment, while also ensuring diversity in terms of gender, international caliber and other attributes. We select members regardless of race, ethnicity, nationality, country of origin and cultural background.

Evaluation of the Effectiveness of the Board of Directors

The company conducted an evaluation on the effectiveness of the Board of Directors. An overview of this evaluation for FY2019 is as follows.

1 Method of evaluation

Evaluation was conducted by the Board of Directors based on a survey of directors and Audit & Supervisory Board members.

2 Overview of evaluation results

It was judged that the effectiveness of the Board of Directors of the company is sufficiently ensured for the following reasons:

- 1) The Board of Directors consists of appropriate members who collectively have sufficient knowledge, abilities, experience and diversity to fulfill their roles and responsibilities.
- 2) It has been confirmed that the management team is working to steadily increase the corporate value by making appropriate responses to sustainability-related issues including social and environmental problems.
- 3) The Board of Directors has set the basic policies regarding the internal control system for the entire Group and appropriately supervises the establishment and management of the system.
- 4) The Board of Directors conducts appropriateness examinations on an individual basis for the stocks owned by the company for reasons other than pure investment purposes, considering the capital cost and comparing the risks and returns of holding the stocks over the medium and long term.

As for the issues pointed out in the FY2018 effectiveness evaluation, the following facts have been confirmed in the evaluation made for FY2019: both qualitative and quantitative improvements were made regarding the reference materials utilized by the Board of Directors; and the renewal of the activities and management system of the CSR Committee, which is in charge of promoting risk management, has begun with a view to raising the level of sophistication of the risk management system.

In the FY2019 survey, the following issues were pointed out as issues to be addressed to enhance the effectiveness of the Board of Directors: need to advance the deliberations on business management and strategies and enhance training for executives. We will implement measures for the issues to maintain and further increase the Board’s effectiveness.

Roles and Independence of Outside Directors and Audit & Supervisory Board Members

Outside directors play supervisory roles in positions independent from business operations, including expressing their opinions by taking a broad view at important meetings, such as Board of Directors meetings. Outside Audit & Supervisory Board members fulfill auditing functions by drawing on their expertise to carry out audits from multifaceted viewpoints and express their opinions at important meetings, such as Board of Directors meetings.

We appoint independent outside directors and Audit & Supervisory Board members in line with our own selection criteria as well as the criteria set by the securities exchanges to ensure that candidates for independent positions have no special relationships with the management team or major shareholders and that they have no conflicts of interest with general shareholders.

Appointment reasons for outside directors and Audit & Supervisory Board Members

NGK SPARK PLUG deems it essential that the Board of Directors be composed of individuals with different backgrounds (knowledge, expertise, etc.) for the company to achieve sustainable corporate growth and increase the corporate value on a medium- to long-term basis. We also attribute importance to having multiple outside directors on the Board who can provide external viewpoints, thereby enhancing the Board's supervisory function and ensuring the transparency of its decision-making.

Title	Name	Reason for appointment	Frequency of attendance
Outside director	Morihiko Otaki	He has a wealth of experience in global companies and expertise as an executive and is expected to supervise management in an appropriate manner.	Attended all 12 Board of Directors meetings held during FY2019
Outside director	Kanemaru Yasui	He is expected to make recommendations to management by using his expertise and experience gained over the course of his long career as a certified public accountant.	Attended all 12 Board of Directors meetings held during FY2019
Outside director	Mackenzie Donald Clugston	As a diplomat, he has a great deal of global experience and expertise in international affairs and trade and is expected to supervise the execution of business by the management team and provide them with advice.	After assuming his post on June 25, 2019, attended 8 of 10 Board of Directors meetings held during FY2019
Outside director	Miwako Doi	She has an abundance of experience and an outstanding record as a researcher in the field of information and communication and has been engaging in advanced research both in academia and in the private sector. She is expected to supervise the execution of business by the management team and provide advice to it, particularly regarding products and business strategies.	—
Audit & supervisory board member	Fumiko Nagatomi	She is expected to use the expertise and knowledge that she has accumulated during her long career as an attorney for the company.	Attended 11 of 12 Board of Directors meetings held during FY2019
Audit & supervisory board member	Akihiko Minato	He has served in important posts at financial institutions and is expected to use his abundant expertise and knowledge regarding finance and corporate management for the benefit of the company.	After assuming his post on June 25, 2018, attended all 12 Board of Directors meetings held during FY2019

Succession Plan

NGK SPARK PLUG's Board of Directors engages in the formulation and implementation of the succession plan, which includes programs such as that to develop global managerial human resources ("HAGI Program"), such as future CEOs and other business leaders. The members of the Board see to it that sufficient time and resources are committed to develop their successors in a planned manner.

Specific involvement by the Board of Directors

Representative directors as well as outside directors proactively participate in the development of managerial human resources, including serving as lecturers for the HAGI Program.

Details of human resource development for CEO candidates

We are implementing the HAGI Program and a training program in which all directors and corporate officers participate. These programs are designed to develop future CEO candidates in a planned and strategic manner by devoting adequate time and resources to the task.

Remuneration for Officers

Basic policy

Remuneration for officers is paid based on the policy of providing them with additional motivation to contribute to improving the company's business performance on a medium- to long-term basis and growing the corporate value, while ensuring they have a shared interest with shareholders by holding company shares themselves. The remuneration consists of fixed remuneration paid in the form of cash; bonus, which is linked with the company's single-year business performance, etc.; and performance-linked stock remuneration paid in accordance with each person's position and level of achievement against the performance targets set in the medium-term management plan and others. For Audit & Supervisory Board members and outside directors, only fixed remuneration is paid.

Our Remuneration Committee acts as an advisory body to the Board of Directors. It deliberates the policies, procedures, details of the remuneration system and the appropriateness of the amount of remuneration planned to be paid to each director, and submits the results to the Board of Directors to ensure the rationality and transparency of the decisions made concerning the remuneration of directors. In FY2019, the committee met once.

Policy on the payment of bonus

As for bonuses, in addition to the base amount set for each position, an amount to be decided as follows is paid to each person: decided comprehensively in consideration of the quantitative targets set for corporate performance such as consolidated net sales and operating income ratio, which reflect the results of sales activities, and based on the qualitative evaluation of the individual performance of the person.

For FY2019, the numerical targets set for consolidated net sales and operating income ratio were 471.6 billion yen and 13.6%, and the actual results were 426.2 billion yen and 10.9%.

Basic policy on the payment of performance-linked stock remuneration

At the 117th general meeting of shareholders held on June 29, 2017, targeting its directors and corporate officers (excluding outside directors and corporate officers who maintain employment agreements with the company; here in after called "directors, etc."), NGK SPARK PLUG made a resolution to introduce a performance-linked stock remuneration system as a system that is closely linked with the corporate performance and is highly transparent and objective, with a view to further improving its medium- to long-term business performance and increasing its corporate value. The system is to be implemented for four fiscal years from FY2017 to FY2020.

In line with the Board Incentive Plan (BIP) adopted under the system, points are given to directors, etc. according to their position and level of achievement against the targets set in the medium-term management plan, etc. After the end of the period set for the system, shares of the company and money in the amount equivalent to the value of the shares will be given to directors, etc. according to the points granted to them. The indicators for the level of achievement made against the targets are set based on the single-year and medium-term performance targets.

The single-year performance targets are consolidated net sales and consolidated operating income, which reflect the results of sales activities. For FY2019, the numerical targets set for these were 471.6 billion yen and 64.2 billion yen, respectively, and the actual results were 426.2 billion yen and 46.4 billion yen, respectively.

The medium-term performance targets are consolidated net sales, consolidated operating income and ROIC set in the medium-term management plan. ROIC indicates whether the company has made profit efficiently or not through capital investment. For FY2020, which is the final year of the medium-term management plan, we set the following as targets for consolidated net sales, consolidated operating income and ROIC: 520 billion yen, 100 billion yen and 13.0% or more.

Total amount of remuneration, etc. paid to officers, total payment amount by remuneration type, and the number of recipients (for FY2019)

Category	Total amount of remuneration paid (millions of yen)	Total payment amount by remuneration type (millions of yen)			Number of recipients (persons)
		Fixed remuneration	Performance-linked remuneration		
			Bonus	Stock remuneration	
Directors (excluding outside directors)	476	334	90	52	8
Audit & Supervisory Board Members (excluding outside members)	50	50	—	—	3
Outside directors	42	42	—	—	4
Outside Audit & Supervisory Board Members	28	28	—	—	2

*1:The following limits are set on the remuneration paid to directors according to the resolution made at the 117th general meeting of shareholders held on June 29, 2017.
Total amount of remuneration (excluding bonus): 60 million yen or below per month
Total amount of bonus: 180 million yen or below per year
According to the resolution made at the 117th general meeting of shareholders, a performance-linked stock remuneration system is to be implemented for four fiscal years from FY2017 to FY2020, targeting the company's directors and corporate officers, with the upper limit on the total payment amount set at 1,000 million yen.

*2: The following limits are set on remuneration paid to Audit & Supervisory Board members:
Total amount of remuneration (excluding bonus): 10 million yen or below per month
Total amount of bonuses: 10 million yen or below per year

*3:The data shown in the table include those for one outside director who passed away (and is deemed to have resigned) on May 2, 2019 and one director and one Audit & Supervisory Board member who resigned at the end of the 119th general meeting of shareholders held on June 25, 2019.

*4: For the bonus and stock remuneration shown in the table, they were recorded as expenses for FY2019.

Audit & Supervisory Board Members and Measures to Strengthen Their Functions

The Audit & Supervisory Board is composed of four members, two of whom are outside members to ensure that timely and appropriate opinions are expressed by the Board from external as well as internal viewpoints. None of the outside members have interests in NGK SPARK PLUG, such as conducting transactions with the company, or belong to any organizations that have interests in it.

Furthermore, one staff member is appointed to support the operations of the Audit & Supervisory Board in accordance with its members’ request, and this staff member engages in internal communication, investigation and other supporting operations. In addition, the Internal Auditing Office and the accounting auditor conduct investigations and make reports in response to requests from Audit & Supervisory Board members, and the respective organizations strive to enhance the quality of audits and work together.

Internal Control

NGK SPARK PLUG formulated its basic policy on internal control and has been implementing it for the sustainable growth of the company and medium- to long-term increase of its corporate value, while ensuring the appropriateness of its business operations. In line with the policy, we will also fulfill our fiduciary responsibilities to shareholders as well as responsibilities to stakeholders.

Stocks Held for Reasons Other than Pure Investment Purposes

Policy on the stocks held for reasons other than pure investment purposes

NGK SPARK PLUG holds the stocks of its suppliers and others basically to maintain and enhance stable business relationships with them, when the company decides that holding the stocks will help increase its corporate value after verifying the economic rationality from medium- to long-term viewpoints. The Board of Directors annually checks whether it is rational and useful in terms of enhancing its corporate value to keep the stocks individually for each of the investee companies, in consideration of the capital cost and comparing the related risks and returns on a medium- to long-term basis. When the Board decides that the company should not continue to hold any of the stocks, the company will sell them as appropriate, in consideration of the market trend.

Criteria for the exercise of voting rights

For the exercise of voting rights for the stocks owned by our company, we will decide whether to exercise the rights for each item of the agenda, considering whether it will contribute to increasing the corporate value of the investee company and of our own company. In particular for the selection of directors, appropriation of retained earnings and other items that have a large impact on shareholder value, we will exercise the voting rights according to the criteria set for the rights.

Enhancement of Group Governance

NGK SPARK PLUG has corporate officers who were locally recruited at its regional headquarters (RHQs) for the Americas, EMEA and Asia, in order to ensure that speedy and accurate managerial decisions are made at bases closer to the markets they serve in view of the company’s globally expanding business environment. We have also formed unique governance teams at the RHQs to build an optimal decentralized system on a group-wide basis and enhance corporate governance as the entire Group.

Moreover, we have newly established the Global Group Governance Headquarter as an organization that audits the effectiveness of the Group’s governance as an entity that is separate from its business execution. This organization will formulate and implement measures to carry out audits on the management of Group companies and RHQs and on the core business operations of each department. It will also formulate and implement measures to enhance internal control across the Group and will thus play an important role for the enhancement of the Group’s governance.

Risk Management

Risk Management Policy

We adapt from a global viewpoint to changes in the management environment surrounding our group and to the diversification of risks and will foster risk management to reduce or avoid the loss of managerial resources, thereby improving our corporate value.

Action Guidelines

- We identify the risks that might hamper the achievement of our management targets from a global and long-term viewpoint and strive to prevent the actualization of these risks in a planned and organization-based manner.
- In the event that such a risk materializes, we strive to minimize the impact on our stakeholders, maintain their trust and prevent the recurrence of similar incidents.

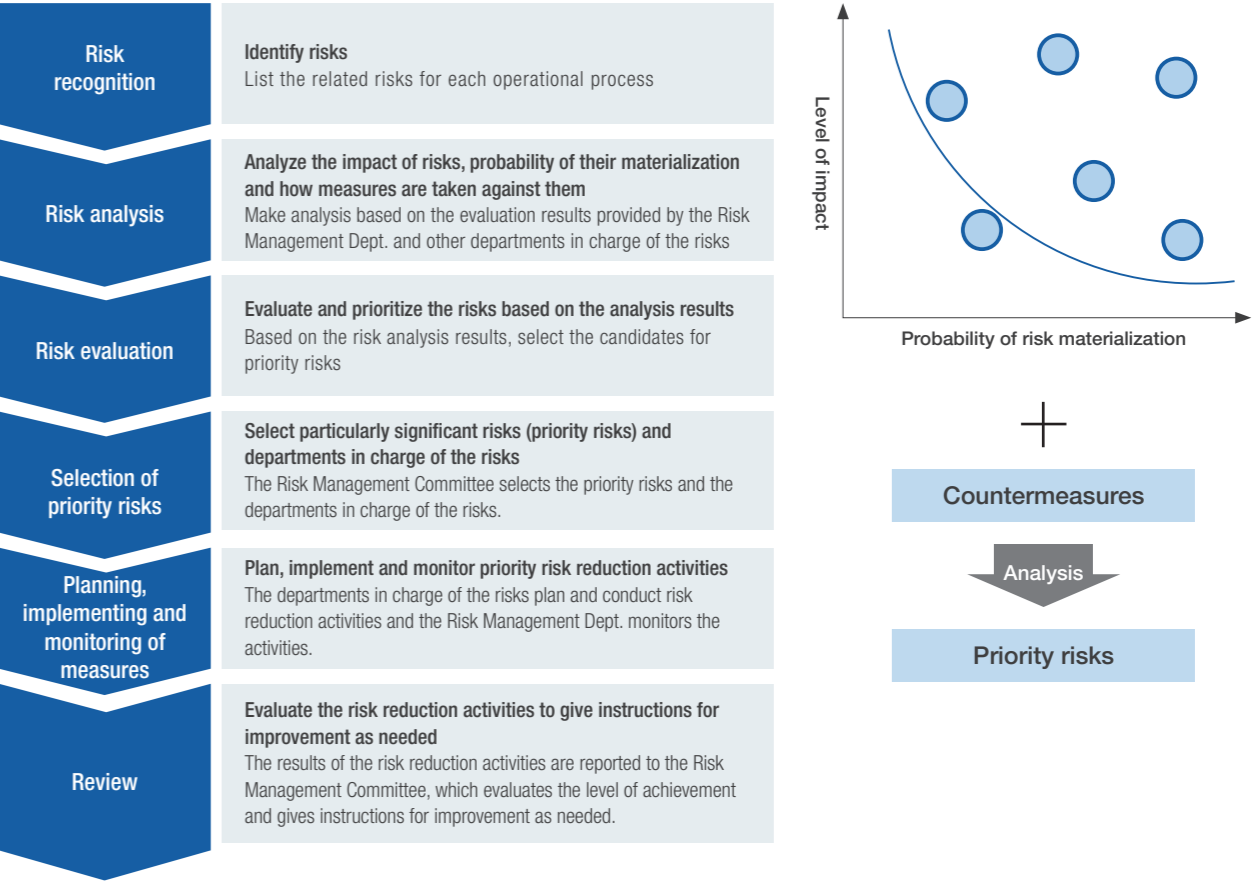
Promotion system

For risk management, we have appointed the President as “Chief Administrator” and the Director in charge of the Risk Management Dept. as “Promotion Manager” and are making efforts to improve our risk management system and its operation.

Moreover, we have established the Risk Management Committee, which is chaired by the director appointed by the Chief Administrator. This committee regularly makes improvements on the risk management system and monitors its operation. The effectiveness of the system is also regularly reviewed and reported to the CSR and Sustainability Committee for its confirmation.

Process to identify priority risks

In order to identify and limit those risks that could have serious impacts on our business continuity and on the achievement of our targets, we follow the risk management process as described below. We will also evaluate the ESG-related risks including those concerning climate change and human rights.



Business Continuity Management (BCM) (Business Continuity Management:BCM)

In preparation against possible earthquakes and other large-scale disasters, we are conducting BCM activities. Specifically, we are making business continuity plans and working on disaster control and reduction in a group-wide basis to minimize damage in the event of a large-scale disaster and resume production as soon as possible if operation is suspended, thereby helping customers maintain their supply chains.

We are also implementing measures against infectious diseases. To deal with COVID-19, we expanded our work at home system and reviewed work shifts in line with the internal guidelines, thereby continuing to operate our business while preventing infection. We will verify the results to make more preparations against infectious diseases.

📖 Measures against COVID-19⇒P.85

Major initiatives related to business continuity plans (BCPs)

We have made a BCP for each of our departments. Each plan defines the initial response to be made and recovery procedures to be followed in case of emergency.

IT departments

To ensure our business continuity, we are continuously working to minimize the damage that might be caused to our IT systems in the event of a disaster and speed up the time required for recovery.

To minimize such damage, we have been gradually transferring our Internet platform and operating environment established for our business system to a highly robust data center. Also, to shorten the recovery time, we are shifting to cloud backups so that we can recover and restart the systems by using undamaged backups.

We also plan to integrate the IT systems of our domestic Group companies by using an integrated server infrastructure so that all companies can take BCP measures on the same level.

Moreover, we are regularly providing more specific and practical education and training so that employees can make better responses in case of a disaster.

Procurement departments

We are fostering BCP measures for key procurement items such as materials and parts, including purchasing from multiple suppliers. In view of the fact that we need a range of materials and parts to manufacture our products, we have built up a system to implement BCP measures across the supply chain in cooperation with suppliers.

Business departments

In the BCP made for each department, we set a limit for the recovery time required for our major products. We also formulate action plans for the recovery teams to achieve early recovery.

BCP training

We conduct BCP training every December for the purpose of resuming business as soon as possible in the event of a disaster. BCP training is designed to improve the effectiveness of BCPs by formulating recovery plans for the major businesses, organizing recovery teams and implementing recovery activities. To prepare for a situation where our internal network is unavailable, we conduct training on communicating with the emergency headquarters using IP wireless equipment and sharing information via the Internet.



Building damage diagnosis training using a drone



Group training of emergency personnel

Major disaster control and disaster reduction activities

Implementation of the joint disaster prevention drill

In anticipation of a Nankai Trough Megathrust Earthquake, we are implementing the Company-wide Disaster Prevention Drill as a joint drill for domestic Group companies. The drill includes training for evacuation, confirmation of employees' safety, incipient stage firefighting, and inspection of damage caused to facilities and equipment and is designed for early recovery in the event of an emergency.

Measures against storm and flood damage

Recently, climate change has been causing more extensive storm and flood damage. In response we annually check the hazard maps of the areas where our sites are located and implement measures as necessary.

Raising employees' awareness of disaster prevention

In order to enhance the disaster response capabilities of our employees and foster our business continuity, we distribute to employees copies of the booklet titled "NGK Spark Plug Disaster Prevention," which shows the action guidelines to be followed in the event of a disaster.



Training for secondary evacuation



Stretcher transport training

Information Security

Information Security Policy

We regard all of our own information assets as one of our management resources. Through the proper protection and effective use of our information assets, we pursue healthy maintenance and development of our business.

Action Guidelines

- We establish rules that clearly define the system and responsibilities for the protection and management of all information assets including the information we keep for our customers, the know-how and intellectual properties owned by our group, and personal information.
- We comply with laws, ordinances, and regulations regarding information security.
- We educate all executives and employees who handle information assets about the importance of information security, and about specific items to be observed.
- We continuously update the information infrastructure for the maintenance and improvement of the confidentiality and stability of all information assets.
- We promote measures to prevent accidents in order to address the risks of information security breaches associated with the continuous advancement and sophistication of information technology. Should an accident occur, we will strive to minimize the damage and take preventive measures against recurrence.

Promotion system

The director in charge of the Information System Dept. serves as the Chief Administrator to ensure information security. We also have our Information Security Committee chaired by the Chief Administrator with an eye to increasing the effectiveness of our information security management and reducing security risks regarding the NGK SPARK PLUG Group's information assets through the concerted effort of the management team and on-site workers. We will continue to foster appropriate measures by checking how information security activities are conducted across the Group.

For confidentiality management, we have a working group on confidentiality management that reports to the Risk Management Committee. The working group is tasked with identifying and reducing the risks related to the management of confidential information and protection of personal information.

Security measures

We are continuously implementing measures to deal with the types of information security risks that pose a threat to companies and other organizations.

In response to the recent increase of damage caused by cyberattacks, we have established a Computer Security Incident Response Team (CSIRT).

We are thus working to improve the level and sophistication of our information security with a focus on both preventive and follow-up measures.

Confidentiality management

The working group on confidentiality management annually inspects the company-wide status of confidentiality management based on the confidentiality management rules set by the company. The inspection includes self-inspection by each department and mutual inspection between departments. The inspection items are reviewed according to the broader progress of informatization in society for the enhancement of the checking function.

Furthermore, in addition to the rules on the in-house handling of confidential information, we have also established rules on the use of confidential information outside the company in order to prevent the leaking of such information, including rules on the use of portable computers and cloud services, and we monitor compliance with the rules.

Protection of personal information

As exemplified by the General Data Protection Regulation (GDPR) enforced in Europe, measures to protect personal information have been enhanced globally. In response, the NGK SPARK PLUG Group has set a range of internal rules to appropriately protect, manage and handle the personal information of its customers and employees.

Measures against COVID-19

We are implementing measures against COVID-19, which is spreading globally, giving first priority to the safety and health of NGK SPARK PLUG Group employees and all those related to the Group.

Global measures

NGK SPARK PLUG Group has bases across the world, and the situation concerning the spread of COVID-19 and related restrictions imposed on the public, such as lockdowns, differ by country and region. Accordingly, we give priority to implementing measures in accordance with the local situation speedily and appropriately at each of our bases. The local operational situation and status of infection is reported by each of the bases to the head office, which provides support to them as necessary.

Measures taken in Japan to prevent the spread of infection

In the middle of January 2020, the first case of COVID-19 infection was confirmed in Japan, giving rise to public concern. Then a series of new cases were reported and the Japanese government established its response headquarters on January 29. Almost concurrently, we also launched our anti-novel COVID-19 headquarters, manned by the President, who serves as the head of the HQ, as well as the Executive Officer of the Corporate Strategy Group and the Executive Officer of the Corporate Administration Group. Since then we have implemented a range of measures to control the infection.

Work system

Encouraging employees to work from home

We have expanded our existing work from home system to deal with the spread of COVID-19 by extending it to also include those working shorter hours and those continuing to work after reaching the retirement age. We are encouraging employees to work from home to the extent that they can continue to perform their duties.

For the period from April to May 2020, we asked employees engaging in jobs that can be performed at home to work from home in principle, and 50% to 60% of the targeted employees did work from home.

Fostering staggered commuting

We are fostering staggered commuting so that employees can avoid crowds when commuting.

Allowing employees to drive to their workplaces on a temporary basis

In order to prevent the risk of employees becoming infected while commuting via public transportation, we allowed them to drive to their workplaces on a temporary basis.

Health management

Disinfection, ventilation and mask-wearing

We encourage employees to wash their hands and use disinfectants frequently and increase ventilation. We also strongly recommend that they wear masks.

Daily health screening at workplaces

At all our workplaces, we check whether there are employees who have symptoms of cold or are suspected of infection and whether there are any signs of the spread of infection at the workplaces.

Measures for employees returning to Japan from overseas

We respond appropriately in line with the government's policies and allow returnees to enter our premises only after we confirm that their health observation results indicate no problems and the occupational physician gives permission for their entry.

Business operations, business trips and meetings

Prohibiting business trips in principle

We initially prohibited employees from visiting the countries and regions where the infection was spreading, but subsequently the infection began to spread also in Japan. We therefore prohibited employees from making any business trips, including visits between factories, from April to June 2020.

Holding meetings and training seminars online in principle

In order to avoid the so-called three Cs (closed spaces, crowded places, and close-contact settings), we encourage employees to hold meetings and training seminars online and are using online tools also for meetings with those outside the company.

Establishment of satellite offices (decentralization of workplaces)

From April to May 2020, we used the auditorium and meeting rooms as satellite offices, thereby preventing employees from working in crowded workspaces.

Social distancing at the canteen

We increased the number of shifts at the canteen and decreased the number of people working on the same shift. We have also reduced the number of seats available at the canteen and ensure that employees will not be seated face to face. We also ask employees to refrain from talking when they are eating at the canteen.

We give first priority to employees' safety and health in implementing infection control measures. We fostered telecommuting also from the viewpoint of work style reforms and implemented special measures for employees who needed to commute to their workplaces, such as promoting staggered commuting and working at satellite offices.

We will continue to implement appropriate measures in consideration of the situation at each point in time.

Executive Officer, Corporate Administration Group
Kenji Isobe

Responses to infected employees and those who have had close contact with infected people

We made a flow chart to clearly show the guidelines to be followed by employees if either they or members of their household become infected.

Major details

- Infected employees are prohibited from commuting to their workplaces until they are diagnosed as having become well enough to do so.
- Employees who have had close contact with infected people and could potentially be infected themselves should stay at home.
- Those who have had close contact with infected people need to stay at home for 14 days after their last contact with such people.

Ensuring safety of stakeholders

We have been proactively holding meetings online in consideration of the safety of our stakeholders, including shareholders, investors, customers and suppliers. We also determine whether to cancel or postpone events to which we generally invite many people according to COVID-19 situation at each point in time.

In preparation for a resurgence of the pandemic and new infectious diseases

We were able to take adequate measures against the spread of COVID-19 but some of the guidelines that we had previously formulated against new infectious diseases were not practically useful to deal with the pandemic. Also, we encouraged employees to work from home to prevent the spread of infection, but our IT environment was insufficient to allow large numbers of employees to adopt remote working, making it necessary that we improve our IT capability. In response, we will review the guidelines to prepare for a resurgence of the pandemic as well as for new infectious diseases.

Activities as a corporate citizen

We are also working to contribute to society by supporting activities conducted to control COVID-19.

Providing medical institutions with masks as well as eye shields made by NGK SPARK PLUG

We donated about 52,000 masks kept in storage by NGK SPARK PLUG to medical institutions located in the same areas as the Group's bases.

Moreover, we made eye shields by using our 3D printers and injection molding machines and donated them to medical institutions in need of such equipment.



Joining the IP Open Access Declaration against COVID-19

NGK SPARK PLUG has joined this declaration, deciding not to assert any of its intellectual property rights (patent, utility model, design and copyright) for a limited time period without any consideration or compensation for acts aimed at ending the spread of COVID-19, including the diagnosis, prevention, containment and treatment of the infection.

Website about the Intellectual Property (IP) Open Access Declaration against COVID-19:

► <https://www.gckyoto.com/covid19>



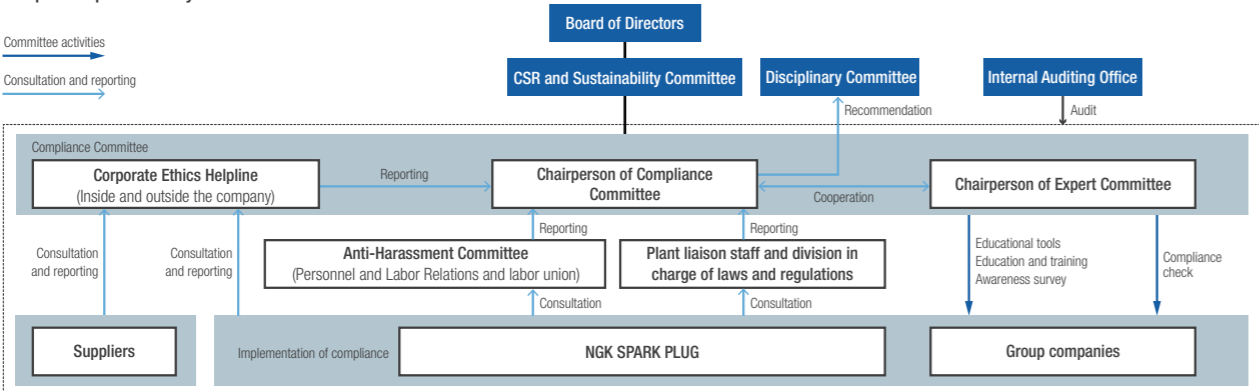
Compliance

Compliance Policy
<p>With recognition that our company is a member of society, we enhance corporate ethics and understand the spirit and meaning of laws, company regulations, international rules, and social norms in order to appropriately meet social demand and become a company trusted by the international community.</p>
Action Guidelines
<ul style="list-style-type: none">• We not only comply with laws and regulations, but also act in good faith with common sense and responsibility as a member of society.• We regularly educate and raise the awareness of all our employees to impart a high level of ethics and correct knowledge, with which they can act voluntarily to prevent a violation.• Should a violation occur, we will promptly investigate the causes and take remedial actions. We will strive to take appropriate countermeasures to prevent recurrence and fulfill our accountability.

Promotion system

In order to enhance compliance, we established the Compliance Committee chaired by the Representative Director. This committee conducts activities to prevent noncompliance issues. It will also give instructions about the measures to be taken in the event of a noncompliance incident and monitor the implementation of the measures. Moreover, it provides compliance education and conducts awareness-raising activities targeting both executives and employees while also providing related information and raising employees' compliance awareness through designated compliance facilitators at each department.

Compliance promotion system



Corporate Ethics Helpline
<p>We have established the Corporate Ethics Helpline as an internal reporting system available to employees and suppliers seeking consultation and making reports regarding compliance. We have worked to improve user convenience by establishing channels not only inside the company but also via an external expert service provider and enabling employees and suppliers to seek consultation and make reports also outside work hours and on holidays. This service can be used anonymously.</p> <p>Regarding consultations and reports received, facts are investigated with discretion so that the reporting employee or supplier is neither identified nor feels uncomfortable, and if problems are confirmed, they are dealt with promptly.</p> <p>In FY2019, there were 80 consultations and reports, including those from employees of Group companies and those related to labor affairs and internal regulations, and we promptly took corrective actions for the identified problems.</p> <p>We are continuously working to make the helpline service widely known by measures such as introducing it in training, putting up related posters and distributing carrying cards describing the service.</p>
Anti-Harassment Committee
<p>Labor and management are cooperating to prevent all kinds of harassment in their effort to protect the human rights of employees. The Anti-Harassment Committee closely examines and verifies reports and consultations received by the harassment consultation desks set up in each of the factories and provides guidance for correction as necessary. The details of this committee's activities are reported to the Compliance Committee.</p>

Prevention of corruption

We are striving to prevent corruption in line with the statement made in our Corporate Code of Conduct: “We shall promote fair, transparent, free competition and sound trade. We shall also ensure that our relationships and contacts with government agencies and political bodies are of a sound and proper nature.”

We issued the Compliance Guidebook in 2012, in which we set the rules concerning the prevention of corruption, including the prohibition of involvement in political contributions or bribery, and made employees aware of these rules. Subsequently, in 2013, we issued the Conduct Guidelines Concerning the Giving and Receiving of Gifts and Entertainment to raise employees' awareness of the issues and prevent them from becoming involved in misconduct. Further, in 2016, we signed the UN Global Compact, openly reaffirming our commitment to preventing corruption.

We are thus working to prevent corruption in line with the guidelines and others. We respond to any violations of the anti-corruption rules mainly through the Compliance Committee. Our overseas Group companies are also taking action to prevent corruption, especially to prohibit and prevent bribery of civil servants, including providing employees with related education and conducting surveys on local laws. We also request that suppliers refrain from acts of bribery through our CSR Procurement Guidelines. In FY2019, there were no violations of related laws and regulations across the Group.

Activities concerning competition laws

Taking seriously our violation of the Anti-Monopoly Act of Japan, as uncovered in FY2014, we have established a system to promote compliance with competition laws and to ensure legal compliance both within and outside the country.

In Japan, we formulated the Anti-Monopoly Act Compliance Manual and distributed copies to employees while holding a range of related seminars internally for both executives and employees. Moreover, we have introduced an in-house e-mail inspection system to monitor and prevent recurring violations of the competition law.

Our overseas Group companies are required to report the activity status regarding compliance with competition laws to NGK SPARK PLUG on a regular basis. In addition, the company's teams in charge of affairs concerning competition laws and compliance visit the Group companies, where they audit the companies' compliance systems and implementation status and check whether local employees are sufficiently aware of the related rules. Seminars featuring guest speakers are also held.

We will continue our education and auditing activities to ensure compliance with competition laws both in Japan and abroad.

Export control

In order to ensure compliance under the multilateral export control regime (MECR) established for international peace and safety, we have established related internal rules and an in-house export control organization. We also conduct awareness-raising and inspection activities targeting departments engaged in export control, thereby ensuring and enhancing our export control in compliance with the related laws and regulations.

Compliance education and awareness raising

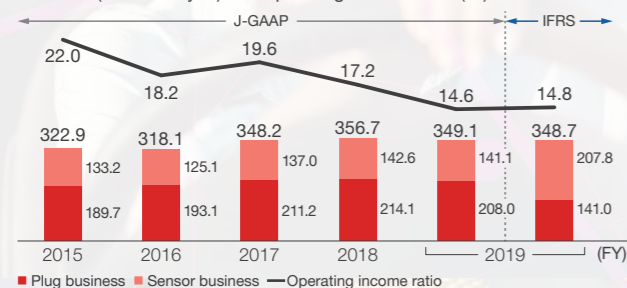
To raise employees' awareness and knowledge regarding compliance, we are continuing to educate them by using the Compliance Guidebook, which summarizes the rules concerning companies and society, and the Compliance Newsletter, which provides specific examples of compliance issues that could arise in our daily operations, in addition to holding level-specific and theme-specific training.

Moreover, in order to check employees' level of understanding about the corporate rules and systems and to examine the corporate culture and identify compliance risks, we conduct a questionnaire survey on compliance targeting employees and then give feedback to their workplaces to foster improvements.

FY2019 Automotive Components Group

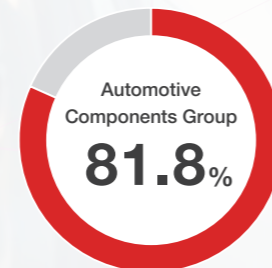
Revenue **348.7 billion yen**

Revenue (billions of yen) and operating income ratio (%)



Operating income **51.7 billion yen**

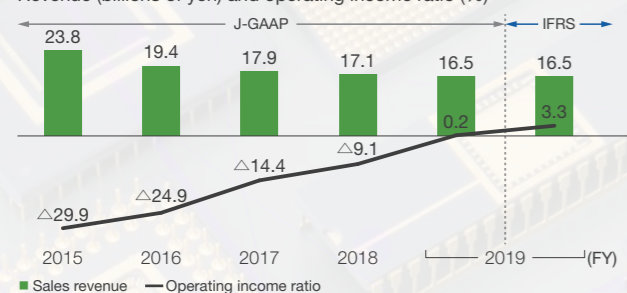
Revenue composition



FY2019 Technical Ceramics Group Semiconductor business

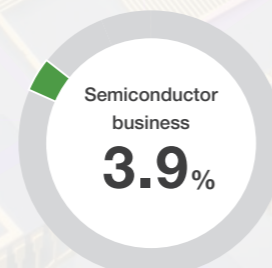
Revenue **16.5 billion yen**

Revenue (billions of yen) and operating income ratio (%)



Operating income **0.5 billion yen**

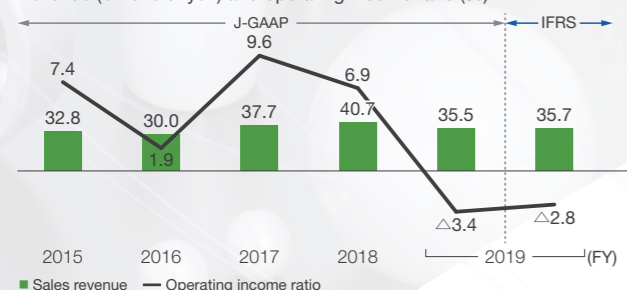
Revenue composition



FY2019 Technical Ceramics Group Ceramics business

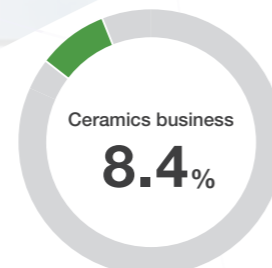
Revenue **35.7 billion yen**

Revenue (billions of yen) and operating income ratio (%)



Operating loss **1 billion yen**

Revenue composition

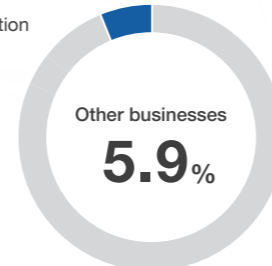


FY2019 Other businesses

Revenue **25.1 billion yen**

Operating loss **2.8 billion yen**

Revenue composition

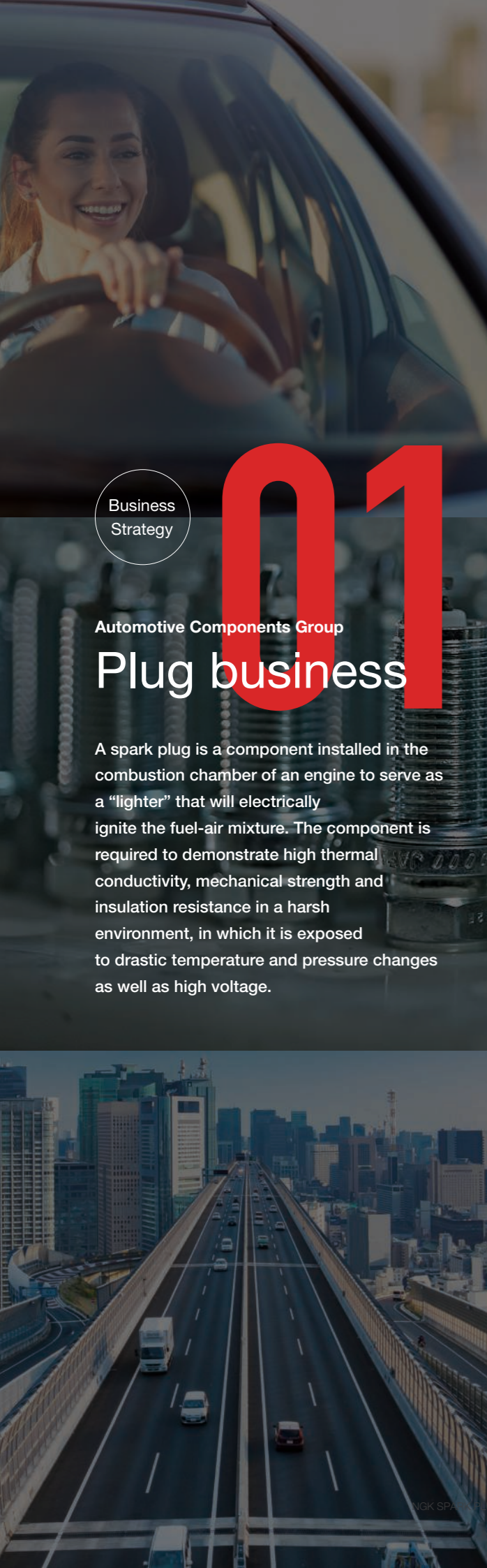


Business Strategy

This section explains the results of each business in FY2019 and their medium-term prospects.

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Business
Strategy

Automotive Components Group

Plug business

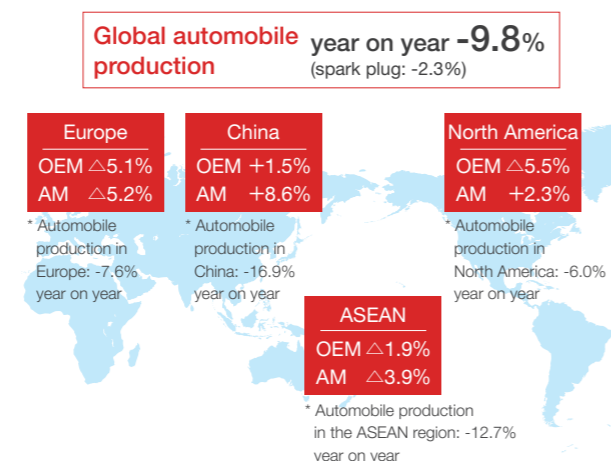
A spark plug is a component installed in the combustion chamber of an engine to serve as a “lighter” that will electrically ignite the fuel-air mixture. The component is required to demonstrate high thermal conductivity, mechanical strength and insulation resistance in a harsh environment, in which it is exposed to drastic temperature and pressure changes as well as high voltage.

Overview of FY2019

Although revenue of the plug business was stagnant, particularly in the Chinese market, due to the decelerated growth in the spark plug market in the first half of the term stemming from the US-China trade frictions as well as to the impact of the COVID-19 pandemic from the fourth quarter, the revenue increased year on year (disregarding the effects of exchange rates). This is attributable to the favorable sales trend in the North American repair market and the expansion of sales seen until the third quarter in the Chinese market.

While the global market environment deteriorated, with automobile production decreasing by 9.8% year on year, we managed to limit the year-on-year decrease in the sales volume of our spark plugs to 2.3%, a rate outperforming the market average. In China in particular, the sales volume of our spark plugs for the OEM market and repair market rose by 1.5% and 8.6%, respectively, as a result of the expanded sales network and our efforts to drive our brand penetration.

Sales volume of spark plugs by region

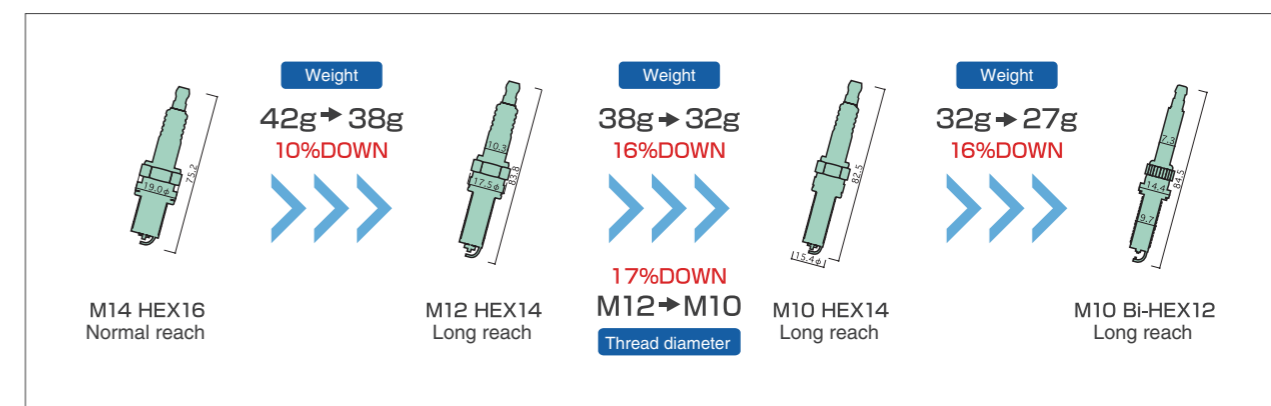


Strengths of the business

Meeting complex technological needs

In recent years, the automobile industry has been focusing on achieving higher fuel efficiency and lower environmental emissions as well as on downsizing engines, in which spark plugs are installed, to secure sufficient space in the engine bay. This trend is amplifying the demand for thinner and longer spark plugs, but advanced technologies and prolonged R&D efforts are required to reduce the thickness of their ceramic insulation parts.

Because our business covers the entire process of ceramics production right from the development of materials, we can respond meticulously to the market's need for higher



performance and more demanding specifications.

Because our customer base includes almost all automakers, we are also in an advantageous position to keep an eye on the latest technological trends and develop technologies that meet the market demand.

Expanding sales networks

Spark plugs are consumables and need to be replaced regularly. We have production and sales bases in 21 countries and have built our own sales channels. We provide technical support locally while meeting the needs of the global repair market. Our advanced technology and reliability have earned us the top share in the world spark plug market.

Risks and opportunities of the business

The automobile industry is in the midst of a once-in-a-century period of radical transformation, with automakers developing electric vehicles (EVs). The impact of EVs on us will be minor on a five- to 10-year medium-term basis, but over the longer term the proportion of pure internal combustion engine vehicles (ICEVs) on the road will decrease, and we acknowledge this as an issue that needs to be faced.

Conventional and hybrid ICEVs, however, are expected to continue selling well from a medium-term perspective, and the demand for spark plugs is expanding. In addition, the number of conventional and hybrid ICEVs owned—which constitute the repair market, for which approximately 75% of our spark plugs by units sold are headed—is projected to continue increasing. Amid these trends, we, as the world's top-share spark plug manufacturer, are responsible for ensuring a stable supply of our products. As environmental regulations are becoming stricter, demand is rising for

precious-metal plugs that meet increasingly complex performance requirements. In response to this demand, we will promote technological development for high-performance plugs and make strategic investments to offer high value-added products, thereby continuing to meet market needs.

Outlook for the future

The spread of COVID-19 has forced automakers around the world to suspend or decrease production, which, in turn, is having an impact on us as well. As long as this production adjustment continues, it will affect the sales of spark plugs for new automobiles significantly. However, the Chinese market has recovered relatively quickly and—although there is a time lag between the two regions in terms of the outbreak of the infection and policy practices—the North American and European markets will likewise recover sooner or later.

Our goal in terms of spark plug production is to increase annual production volume by about 20% over the five years up to FY2020, and this goal is expected to be achieved. As regards our capital investment policy, we will revise our plan for increasing production output according to the demand recovery trend, as well as also maintain our stance of focusing on high value-added precious-metal plugs.

Since COVID-19 may become an important factor that accelerates the transformation of the automobile industry, we will take not just a short-term perspective, but also a medium- to long-term perspective in collecting and analyzing industry information and reflecting the results in our business plans.



Business Strategy

Automotive Components Group

Sensor business

To make automobile exhaust gas cleaner, it is important to monitor various driving conditions, such as oxygen concentration and temperature of exhaust gas, and make adjustments based on the data collected. We develop a wide variety of sensors that take advantage of certain properties of ceramics in order to contribute to cleaner exhaust gas.

Overview of FY2019

As in the case of spark plugs, the market environment deteriorated, with automobile production decreasing. Nevertheless, the sales volume of our exhaust gas oxygen sensors increased in the Chinese, European and ASEAN regions and, despite the year-on-year decline in sales volume of 6.8% in North America, increased by 2.5% overall. Product-wise, the sales volume of Wide-range oxygen sensor showed significant growth in Europe and, particularly, China, where the introduction of the China 6 emission standards is accelerating the shift from oxygen sensors to Wide-range oxygen sensor. The demand for oxygen sensors for motorcycles also expanded due to the adoption of BS6 emission norms in India. Driven by strong demand and growth in our market share stemming from tightened environmental regulations, these Wide-range oxygen sensor and oxygen sensors for motorcycles, as well as NOx sensors, sold well, with their sales volume outperforming that of FY2018. This resulted in increased Sales revenue year on year (disregarding the effects of exchange rates).

On the other hand, the operating income of the Automotive Components Group decreased for both sensors and plugs owing to the effect of the strong yen and increased depreciation cost.

Sales volume of exhaust gas sensors by region

Region	FY2019 year-on-year results
North America	△6.8%
China	+10.5%
Europe	+9.4%
ASEAN	+0.6%
Overall	+2.5%

Sales volume of sensors by product

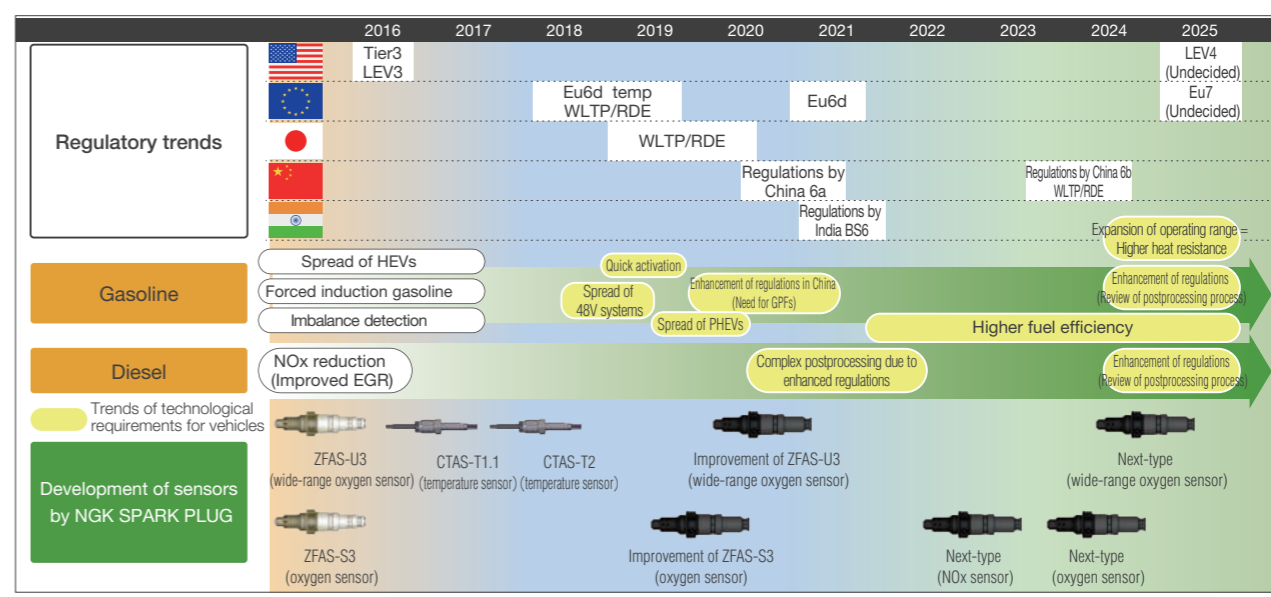
Product	FY2019 year-on-year results
Oxygen sensor for automobiles	△11.1%
Oxygen sensor for motorcycles	+32.4%
Wide-range oxygen sensor	+24.3%
Temperature sensor	△16.3%
Knock sensor	△2.5%
NOx sensor	+6.8%

Strengths of the business

Expansion of demand for exhaust gas sensors

Since the 1990s, when European nations, the United States and other developed countries started to introduce automobile exhaust gas regulations, the strict control of exhaust gas emissions has become a global trend, with emerging economies also tightening their regulations in recent years. In the meantime, the target of regulations has expanded to include emissions from motorcycles in addition to those from automobiles, boosting

Regulatory trends, element technologies and corresponding products



demand for exhaust gas control sensors. The need for sensors with higher performance that can assure compliance with standards is mounting. Such sensors are more technologically advanced than the current mainstream oxygen sensors and include Wide-range oxygen sensor capable of measuring oxygen concentration in exhaust gas more precisely as well as NOx sensors capable of measuring nitrogen oxide.

Technological capabilities that can address stringent requirements

We have a competitive advantage in the technological development of ceramics for use as detector elements. Our oxygen sensors are rated particularly highly among automakers for their quick activation after engine start-up, which is an important requirement for sensors. We have shortened the time required for our sensors to be activated to as little as around five seconds, helping customers meet strict exhaust gas emission standards. Our capability to develop products that provide required performance and put them on the market in a timely manner is our strength.

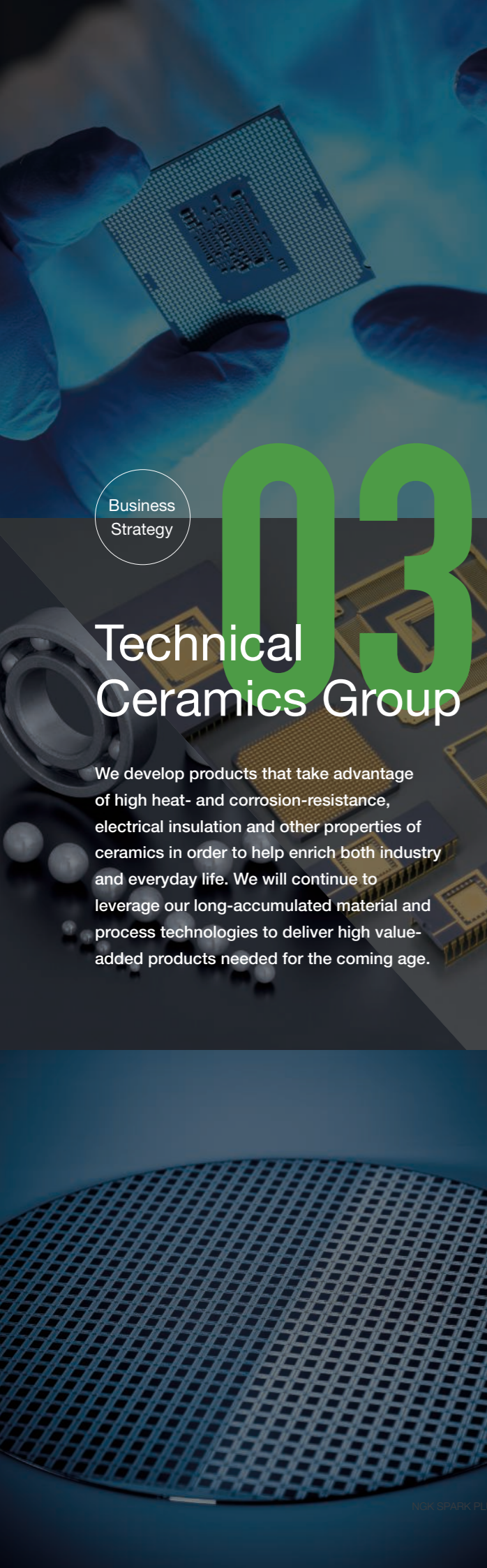
Risks and opportunities of the business

Amid the recent trend in which both developed and emerging economy countries are tightening their exhaust gas emissions control, the demand for higher value-added exhaust gas sensors is expanding among automakers. The stringency level of environmental regulations in China and India in particular is becoming increasingly high, boosting the demand for exhaust gas sensors, whether for automobiles or motorcycles, in the two countries. While we are well aware that the shift to pure electric vehicles is posing a risk of diminished demand for internal combustion engine vehicles and will thereby slow down the sales

volume growth rate of sensors, we also view the tightening of exhaust gas regulations around the world as an opportunity that will lead to the expansion our businesses for Wide-range oxygen sensor, NOx sensors and oxygen sensors for motorcycles—products for which growing sales volume can be expected. Exhaust gas regulations are likely to become increasingly stringent. We will respond to this movement with our technological capabilities. We will actively invest in high value-added products while keeping an eye on ever-tightening emissions control standards and contribute to solving environmental issues by reducing CO₂ emissions.

Outlook for the future

Production adjustments by automakers amid the spread of COVID-19 will affect our sales and profits significantly. As in the OEM market for plugs, the sales of sensors are also expected to pick up when automakers resume production, but we assume that the impact of the infection will linger until at least the end of this year. To increase our production efficiency, we will expand the capacity of our main production bases in China, India and Thailand, while accelerating the transfer of production overseas. We will also promote the streamlining of production lines, redesign of production layouts and utilization of robots to reduce manpower and costs. Capitalizing on the trust we have earned based on our technological capabilities, we will continue our efforts to increase the sales volume and market share of products that help customers meet exhaust gas emission requirements, while also accelerating the input of resources into the Global Innovation Division, a new unit whose mission is to create new businesses.



Business
Strategy

Technical Ceramics Group

We develop products that take advantage of high heat- and corrosion-resistance, electrical insulation and other properties of ceramics in order to help enrich both industry and everyday life. We will continue to leverage our long-accumulated material and process technologies to deliver high value-added products needed for the coming age.

Semiconductor business

Overview of FY2019

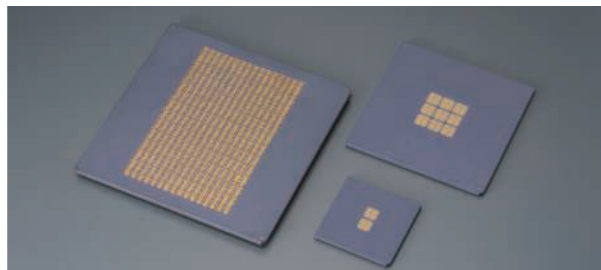
Since FY2016, the first year of the seventh medium-term management plan, we have been pursuing the policies of spinning off the business as an independent subsidiary, encouraging external participation in the management of the business, promoting selection and concentration of products, and reviewing the production bases, with the aim of revitalizing the business. One of our goals was to get the business out of the deficit that had persisted since the financial crisis by FY2019. We met this goal as planned by achieving a full-year surplus, mainly through the reduction of fixed costs.

Strengths of the business

We develop high-quality products by leveraging our superior manufacturing technology and precision and implementing strict quality control. Our strength lies in our capability to meet the needs for complex 3D structures, cavity structures and single- to multi-layered structures; to offer a range of plating options such as electrolytic, electroless, gold, silver and copper plating; and to support small-lot and short lead time orders. We can also make tailored proposals, after IC chips are designed, on the structure and design of ceramic packages based on each customer's application and basic requirements.

Outlook for the future

As we have achieved a full-year surplus for the business, we will shift our focus from measures for “survival” to those for “winning,” which will generate revenues. More specifically, we will promote the sales of ceramic packages for STFs and other products with a high degree of competitive advantage created based on our technological strengths and increase their share in our total sales, with a view to building a business structure that does not rely on semiconductor packages for smartphones. We will also focus on technological development for the communications domain, including 5G, which is considered a growing market.



Probe card substrates

SPE business

Overview of FY2019

Sales revenue were expected to pick up in or after the second half of FY2019, but because of the slowdown of the semiconductor production equipment market we revised downward Sales revenue when the first-half results were published. Sales revenue for FY2019 were almost the same as the revised forecast.

Although our ceramic products were newly adopted for customers' advanced processes and made a positive contribution to overall sales, operating income decreased year on year because sales decreased in other segments and the product mix turned adverse.

Strengths of the business

Demand is rising for electrostatic chucks and ceramic components for semiconductor production equipment that meet the requirements of “uniform surface temperature” and “low particle generation.” We are manufacturing electrostatic chucks using the sheet layering technology developed in our semiconductor business. This technology can be used very effectively in the manufacture of semiconductor devices having narrow wiring pitches. We also have a technology that can effectively remove particles in the final stage of wafer processing. With these technologies as our competitive strengths, we will actively approach semiconductor production equipment manufacturers.



Electrostatic chucks

Outlook for the future

The demand for semiconductors is expected to expand against a backdrop of the advance and spread of technologies such as 5G, AI and IoT, bringing a recovery in market conditions in 2020. Given this projection, we anticipate that the SPE business will improve significantly in terms of profitability. However, because we had been focusing on increasing our production capacity of electrostatic chucks in anticipation of an increase in demand for semiconductors, our depreciation cost increased in FY2019, resulting in a drop in profit. Moving forward, we will be ready to seize every opportunity brought

about by future brisk demand by committing ourselves to, among other efforts, “enhance quality and stabilize the production system” and “promote development to meet new demand and acquire orders.”

Cutting tool business

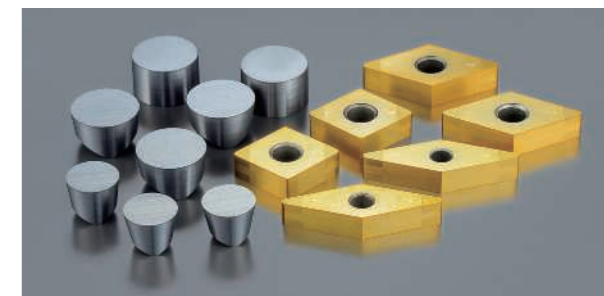
Overview of FY2019

Although sales of products for aircraft increased, they were not able to make up for the decrease in sales in the automobile segment stemming from the downturn of the global auto market. This resulted in a year-on-year decline in Sales revenue.

Operating income also fell year on year due to the impact of the strong yen and decreased sales.

Strengths of the business

Our ceramic cutting tools for metal processing have been maintaining a large market share for many years. Our BIDEMICS cutting tool for aircraft engine component processing has been adopted by many customers for its high productivity.



BIDEMICS

Industrial ceramics business

Overview of FY2019

Sales revenue and operating income decreased year on year. This was because although sales were robust for oscillators for medical applications, which are one of our piezoelectric products, the sales of other product groups declined.

Strengths of the business

We undertake the whole process from the development of materials to the manufacture of products, and this integrated production enables us to supply products, including silicon nitride balls, piezoelectric elements and oscillators, that are fabricated meticulously in response to customers' requests.



Business
Strategy

Other businesses

For NGK SPARK PLUG, which has been relying on spark plugs, oxygen sensors and other automotive components for more than 80% of its sales, one of the most important priorities is to create new businesses in order to diversify our business portfolio for long-term sustainable growth. We will actively cultivate new business domains by leveraging our long-accumulated strengths.

Medical business

Future direction

Our medical business provides products for implant and healthcare applications based on our ceramics and sensing technologies developed in the plug and sensor businesses. In the implant business, we have been focusing on developing and marketing artificial bones used to replace missing parts of damaged bones and their related products. We will expand our product lineup to include orthopedic implant products in addition to ceramic artificial bones to expedite business growth. In the healthcare business, we manufacture and sell oxygen concentrators for patients with respiratory problems, such as chronic obstructive pulmonary disease (COPD). In December 2018, we acquired the shares of CAIRE, the oxygen concentrator business arm of the Chart Group in the United States, and started expanding our sales channels overseas. CAIRE's lineup covers all types of oxygen concentrators—portable, movable, and stationary—and the collaboration with CAIRE will enable us to further expand the business. Moving forward, we will utilize our sensing technologies to develop products that will help increase the value of medical care and other industries.

Challenges

As an aging population is becoming an issue not only in Japan but also in the United States, Europe and China, the medical business potentially has a large market. Respiratory diseases are particularly prominent in China and India, and these two countries are considered huge prospective markets. One of our challenges is how we can shorten the time required to obtain regulatory approval and licenses for our medical devices, which is normally a time-consuming process, in order to put them on the market in a timely manner. A solution to this in our healthcare business is the acquisition of CAIRE, which has allowed us to expand our sales channels overseas. Similarly, we also intend to expand the implant business through such means as forming partnerships with overseas companies. The optimization of our product lineup is another challenge. We will tap into new areas of business to which we can apply our sensing technologies as well as find new needs and seeds to develop new products.



Bioceramics

Fuel cell business

Future direction

We have been developing solid oxide fuel cells (SOFCs) since 1999 by mobilizing our know-how and technologies, including multilayering and metal-ceramics bonding technologies, which have been built up through many years of experience in manufacturing spark plugs, automotive oxygen sensors and semiconductor packages. Because SOFCs are more energy efficient than other fuel cells and considered effective in reducing CO₂ and other greenhouse gas emissions, they are expected to become an important source of clean energy. The heat generated in the chemical reaction process can also be used for the supply of hot water. Although the market size for hydrogen fuel cells is still small, it is expected to substantially expand toward 2030. The market of stationary fuel cells in particular, which our group companies are developing, is predicted to grow at a stable rate. Our group companies are working hard toward the commercialization of SOFCs and becoming a fuel-cell stack maker that offers a comprehensive lineup of fuel-cell stacks for industrial, commercial and household use.

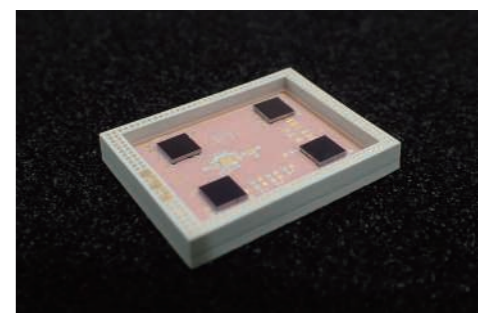
Challenges

While fuel cells, which generate electricity through a chemical reaction between hydrogen and oxygen, are expected to spread in the future as a power generation system that is clean and can be miniaturized, they have disadvantages in terms of cost and durability at present. Our challenge, therefore, is to increase the precision of each technology employed and enhance power-generating efficiency to

reduce costs. Through the development of ceramics power generation technology, we intend to promote the popularization of fuel cells and further contribute to environmental protection.

5G products

We will make inroads into a new business for 5G networks in the millimeter-wave range (28 GHz band), which are expected to be put into full operation in around 2025, as well as Beyond 5G and 6G networks. We are currently working on the development of products for this business by combining our core technologies for sheet lamination, ceramics materials development and high-frequency design. The main target markets are mobile communication applications (such as mobile phones and automotive onboard equipment), communication infrastructure applications (base stations and optical and satellite communication systems, which support data communication and processing from behind the scenes) and local 5G network applications (data communication systems for use within a limited area, such as a factory or farm).



Antenna module for 5G mmWave

TOPICS

Commencement of operation by MORIMURA SOFC TECHNOLOGY CO., LTD.

MORIMURA SOFC TECHNOLOGY CO., LTD., a joint company belonging to NORITAKE CO., LIMITED., TOTO LTD., NGK INSULATORS, LTD. and NGK SPARK PLUG, commenced its operation in December 2019. The new company brings together the SOFC-related technologies and know-how of the four partners and integrates their management resources to achieve the common goal of commercializing SOFCs as soon as possible.

📖 About the Morimura Group, see ⇒ P.17



Establishment of CECYLLS Co., Ltd.

NGK SPARK PLUG and Mitsubishi Power, Ltd.* established their joint company, CECYLLS Co., Ltd., in January 2020. The new company will combine Mitsubishi Power's technology to design cylindrical cell stacks, which feature a long life and efficient heat utilization capabilities, with our ceramics mass production technology to produce and sell high-quality cylindrical cell stacks in mass volumes.

* Former Mitsubishi Hitachi Power Systems, Ltd. The name was changed on September 1, 2020.



Financial Results Highlights for the Past 11 Years

J-GAAP												IFRS	
												(Millions of yen)	
(Fiscal year)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2019	2019
Revenue	243,914	269,232	284,746	302,798	329,758	347,636	383,272	372,919	409,912	425,013	426,207	426,073	426,073
Operating income (loss)	10,683	28,770	24,478	23,754	51,661	62,196	66,284	53,595	67,279	58,385	46,444	48,447	48,447
Ordinary income (loss)	10,758	27,379	23,740	27,674	54,960	67,907	64,483	55,559	69,094	59,258	44,249	—	—
Profit (loss) attributable to owners of the parent	13,509	23,680	25,524	20,909	32,704	36,753	30,815	25,602	44,335	42,638	30,116	33,698	33,698
Capital expenditures	10,977	8,767	14,004	24,012	41,034	36,372	45,339	36,328	37,591	56,587	48,771	51,004	51,004
Depreciation	18,825	16,646	15,438	12,798	11,567	13,337	16,834	19,601	20,920	23,979	30,186	31,952	31,952
R&D expenses	13,907	15,763	16,036	17,100	19,400	21,337	23,123	23,416	25,283	28,072	28,797	28,315	28,315
Cash flows from operating activities	34,255	35,398	21,079	26,194	54,697	36,593	56,465	49,764	65,707	43,704	57,285	59,787	59,787
Cash flows from investing activities	△17,270	△20,412	△15,850	△15,442	△61,148	△12,865	△82,331	△53,410	△26,422	△48,380	52,325	△52,926	△52,926
Free cash flows	27,834	30,684	8,507	8,456	3,541	13,995	△25,866	6,335	29,636	△21,356	2,704	4,627	4,627
Dividend payout	1,198	3,594	4,789	4,788	5,223	7,181	8,487	9,055	10,823	14,601	14,601	14,435	14,435
Total equity	207,006	218,159	235,613	268,309	302,793	343,380	341,044	354,710	388,115	401,505	389,795	399,737	399,737
Total assets	331,476	337,318	340,295	366,489	458,148	485,497	526,103	563,801	599,972	629,417	641,300	663,374	663,374
Interest bearing debt	39,814	36,697	37,399	27,418	57,339	46,153	80,212	99,275	98,115	110,755	147,393	152,946	152,946
												(Yen)	
Earnings (losses) per share	62.01	108.71	117.25	96.06	150.26	168.88	141.60	119.44	209.37	204.74	145.72	163.06	163.06
Equity attributable to owners of the parent per share	942.41	994.36	1,075.24	1,223.41	1,381.38	1,566.80	1,557.16	1,660.06	1,837.46	1,917.04	1,897.79	1,946.10	1,946.10
Cash dividends per share	11.00	22.00	22.00	22.00	28.00	36.00	42.00	42.00	60.00	70.00	70.00	70.00	70.00
Operating income ratio (%)	4.4	10.7	8.6	7.8	15.7	17.9	17.3	14.4	16.4	13.7	10.9	11.4	11.4
Return on Sales revenue (%)	5.5	8.8	9.0	6.9	9.9	10.6	8.0	6.9	10.8	10.0	7.1	7.9	7.9
Gross profit on sales (%)	21.0	27.4	25.1	24.2	32.6	35.8	35.6	33.0	34.6	33.8	31.5	31.4	31.4
ROE (Return on equity) (%)	7.0	11.2	11.3	8.4	11.5	11.4	9.1	7.4	12.0	10.9	7.7	8.4	8.4
ROA (Return on assets) (%)	4.4	7.1	7.5	5.9	7.9	7.8	6.1	4.7	7.6	6.8	4.7	5.1	5.1
ROIC (Return on invested capital) (%)	3.2	8.0	6.5	5.8	11.0	11.6	11.4	8.5	10.0	8.2	6.2	6.2	6.2
Equity ratio (%)	61.9	64.2	68.8	72.7	65.6	70.2	64.4	62.5	64.3	63.4	60.2	59.7	59.7
Total asset turnover (%)	0.8	0.8	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.8
Dividend payout ratio (%)	17.7	20.2	18.8	22.9	18.6	21.3	29.7	35.2	28.7	34.2	48.0	42.9	42.9

Consolidated Statement of Financial Position

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
Date of transition, March 31, 2019 and 2020

		Millions of yen			Thousands of U.S. dollars
	Notes	Date of transition (April 1, 2018)	2019	2020	2020
Assets					
Current assets					
Cash and cash equivalents	6	¥ 87,479	¥ 74,404	¥ 86,092	\$ 789,835
Trade and other receivables	7	96,736	100,311	92,604	849,578
Other financial assets	14	29,533	9,423	5,897	54,101
Inventories	8	97,746	115,735	116,720	1,070,826
Other current assets		8,745	11,862	13,189	121,000
Total current assets		320,241	311,737	314,505	2,885,367
Noncurrent assets					
Property, plant and equipment	9	206,510	238,012	251,010	2,302,844
Goodwill and intangible assets	10	6,699	15,678	15,774	144,716
Right-of-use assets	12	7,587	8,591	9,541	87,532
Investments accounted for using the equity method	13	13,054	13,179	13,615	124,908
Other financial assets	14	60,470	52,547	43,557	399,606
Deferred tax assets	28	10,137	10,603	14,296	131,156
Other noncurrent assets		2,132	1,579	1,073	9,844
Total noncurrent assets		306,592	340,192	348,869	3,200,633
Total assets		626,833	651,929	663,374	6,086,000

Liabilities and Equity

Liabilities					
Current liabilities					
Trade and other payables	15	44,719	49,049	43,681	400,743
Bonds and borrowings	16	44,793	36,466	45,257	415,202
Other financial liabilities	17	2,096	2,281	3,126	28,679
Income taxes payable		12,209	8,456	2,240	20,550
Other current liabilities	18	34,069	33,332	31,176	286,018
Total current liabilities		137,889	129,586	125,481	1,151,202
Noncurrent liabilities					
Bonds and borrowings	16	50,126	72,194	97,406	893,633
Net defined benefit liabilities	19	25,043	27,199	29,494	270,587
Other financial liabilities	17	10,326	9,164	8,038	73,743
Deferred tax liabilities	28	3,024	568	24	220
Other noncurrent liabilities	18	2,811	3,225	3,191	29,275
Total noncurrent liabilities		91,333	112,352	138,155	1,267,477
Total liabilities		229,222	241,938	263,636	2,418,679
Equity					
Capital stock	21	47,869	47,869	47,869	439,165
Capital surplus	21	54,756	54,835	54,791	502,670
Retained earnings	21	267,089	284,228	291,122	2,670,844
Treasury stock	21	(6,422)	(1,741)	(1,602)	(14,697)
Other components of equity	21	31,739	22,235	3,696	33,908
Total equity attributable to owners of the parent		395,032	407,427	395,876	3,631,890
Noncontrolling interests		2,578	2,564	3,861	35,422
Total equity		397,611	409,991	399,737	3,667,312
Total liabilities and equity		¥626,833	¥651,929	¥663,374	\$6,086,000

Consolidated Statement of Profit or Loss

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the years ended March 31, 2019 and 2020

	Notes	Millions of yen		Thousands of U.S. dollars
		2019	2020	2020
Revenue	4,24	¥ 425,109	¥ 426,073	\$ 3,908,927
Cost of sales		(285,007)	(292,292)	(2,681,578)
Gross profit		140,101	133,781	1,227,349
Selling, general and administrative expenses	25	(84,597)	(87,292)	(800,844)
Share of profit of investments accounted for using the equity method	4,13	497	1,135	10,413
Other income	26	1,989	1,542	14,147
Other expenses	26	(2,670)	(718)	(6,587)
Operating profit	4	55,321	48,447	444,468
Finance income	27	3,351	3,068	28,147
Finance expenses	27	(2,023)	(6,766)	(62,073)
Profit before income taxes		56,649	44,749	410,541
Income tax expenses	28	(15,826)	(11,118)	(102,000)
Profit		40,823	33,631	308,541
Profit (loss) attributable to				
Owners of the parent		40,515	33,698	309,156
Noncontrolling interests		¥ 308	¥ (67)	\$ (615)

	Notes	Yen		U.S. dollars
		2019	2020	2020
Earnings per share	29			
Basic earnings per share		¥194.55	¥163.06	\$1.50
Diluted earnings per share		—	—	—

Consolidated Statement of Comprehensive Income

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the years ended March 31, 2019 and 2020

	Notes	Millions of yen		Thousands of U.S. dollars
		2019	2020	2020
Profit		¥40,823	¥ 33,631	\$ 308,541
Other comprehensive income (net of tax effects)				
Items that will not be reclassified to profit or loss				
Financial assets measured at fair value through other comprehensive income	30	(5,594)	(7,535)	(69,128)
Remeasurements of defined benefit plans	30	(781)	(710)	(6,514)
Share of other comprehensive income of investments accounted for using the equity method	13,30	(20)	(5)	(46)
Total of items that will not be reclassified to profit or loss		(6,395)	(8,251)	(75,697)
Items that may be reclassified subsequently to profit or loss				
Exchange differences on translation of foreign operations	30	(3,252)	(11,975)	(109,862)
Share of other comprehensive income of investments accounted for using the equity method	13,30	(54)	(576)	(5,284)
Total of items that may be reclassified subsequently to profit or loss		(3,306)	(12,551)	(115,147)
Total other comprehensive income (net of tax effects)		(9,702)	(20,803)	(190,853)
Comprehensive income		¥31,120	¥ 12,828	\$ 117,688
Comprehensive income attributable to				
Owners of the parent		30,893	13,119	120,358
Noncontrolling interests		¥ 227	¥ (291)	\$ (2,670)

Consolidated Statement of Changes in Equity

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the Years Ended March 31, 2019 and 2020

		Millions of yen										
		Equity attributable to owners of the parent										
		Other components of equity										
	Notes	Capital stock	Capital surplus	Retained earnings	Treasury stock	Financial assets measured at fair value through other comprehensive income	Exchange differences on translation of foreign operations	Remeasurements of defined benefit plans	Total	Total	Non-controlling interests	Total equity
Balance as at April 1, 2018		¥47,869	¥54,756	¥267,089	¥ (6,422)	¥31,739	¥ —	¥ —	¥31,739	¥395,032	¥2,578	¥397,611
Profit				40,515					—	40,515	308	40,823
Other comprehensive income						(5,612)	(3,226)	(783)	(9,622)	(9,622)	(80)	(9,702)
Total comprehensive income		—	—	40,515	—	(5,612)	(3,226)	(783)	(9,622)	30,893	227	31,120
Purchase of treasury stock					(5,002)				—	(5,002)		(5,002)
Sales of treasury stock				(0)	35				—	35		35
Cancellation of treasury stock				(9,647)	9,647				—	—		—
Dividends	22			(13,610)					—	(13,610)	(242)	(13,852)
Share-based remuneration transactions	23		78						—	78		78
Transfer from other components of equity to retained earnings				(118)		(664)		783	118	—		—
Total transactions with owners		—	78	(23,376)	4,680	(664)	—	783	118	(18,498)	(242)	(18,741)
Balance as at March 31, 2019		47,869	54,835	284,228	(1,741)	25,462	(3,226)	—	22,235	407,427	2,564	409,991
Balance as at April 1, 2019		47,869	54,835	284,228	(1,741)	25,462	(3,226)	—	22,235	407,427	2,564	409,991
Profit				33,698					—	33,698	(67)	33,631
Other comprehensive income						(7,541)	(12,327)	(710)	(20,578)	(20,578)	(224)	(20,803)
Total comprehensive income		—	—	33,698	—	(7,541)	(12,327)	(710)	(20,578)	13,119	(291)	12,828
Purchase of treasury shares					(10,074)				—	(10,074)		(10,074)
Sales of treasury stock					49				—	49		49
Cancellation of treasury stock				(10,164)	10,164				—	—		—
Dividends	22			(14,601)					—	(14,601)	(254)	(14,855)
Share-based remuneration transactions	23		48						—	48		48
Changes in ownership interests in subsidiaries			(92)						—	(92)	1,843	1,751
Transfer from other components of equity to retained earnings				(2,039)		1,329		710	2,039	—		—
Total transactions with owners		—	(44)	(26,804)	139	1,329	—	710	2,039	(24,670)	1,588	(23,081)
Balance as at March 31, 2020		¥47,869	¥54,791	¥291,122	¥ (1,602)	¥19,250	¥(15,553)	¥ —	¥ 3,696	¥395,876	¥3,861	¥399,737

		Thousands of U.S. dollars										
		Equity attributable to owners of the parent										
		Other components of equity								Non-controlling interests	Total equity	
		Capital stock	Capital surplus	Retained earnings	Treasury stock	Financial assets measured at fair value through other comprehensive income	Exchange differences on translation of foreign operations	Remeasurements of defined benefit plans	Total			Total
Notes												
Balance as at April 1, 2019		\$439,165	\$503,073	\$2,607,596	\$(15,972)	\$233,596	\$ (29,596)	\$ —	\$ 203,991	\$3,737,862	\$23,523	\$3,761,385
Profit				309,156					—	309,156	(615)	308,541
Other comprehensive income						(69,183)	(113,092)	(6,514)	(188,789)	(188,789)	(2,055)	(190,853)
Total comprehensive income		—	—	309,156	—	(69,183)	(113,092)	(6,514)	(188,789)	120,358	(2,670)	117,688
Purchase of treasury shares					(92,422)				—	(92,422)		(92,422)
Sales of treasury stock					450				—	450		450
Cancellation of treasury stock				(93,248)	93,248				—	—		—
Dividends	22			(133,954)					—	(133,954)	(2,330)	(136,284)
Share-based remuneration transactions	23		440						—	440		440
Changes in ownership interests in subsidiaries			(844)						—	(844)	16,908	16,064
Transfer from other components of equity to retained earnings				(18,706)		12,193		6,514	18,706	—		—
Total transactions with owners		—	(404)	(245,908)	1,275	12,193	—	6,514	18,706	(226,330)	14,569	(211,752)
Balance as at March 31, 2020		\$439,165	\$502,670	\$2,670,844	\$(14,697)	\$176,606	\$(142,688)	\$ —	\$ 33,908	\$3,631,890	\$35,422	\$3,667,312

Consolidated Statements of Cash Flows

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the Years Ended March 31, 2019 and 2020

	Notes	Millions of yen		Thousands of U.S. dollars
		2019	2020	2020
Cash flows from operating activities				
Profit before income taxes		¥ 56,649	¥ 44,749	\$ 410,541
Depreciation and amortization		26,624	31,952	293,138
Impairment losses		1,675	—	—
Foreign exchange loss		410	2,873	26,358
Interest and dividends income		(2,410)	(2,167)	(19,881)
Interest expenses		767	899	8,248
Share of profit of investments accounted for using the equity method		(497)	(1,135)	(10,413)
Loss on disposal of noncurrent assets		910	637	5,844
Decrease (increase) in trade and other receivables		(1,705)	2,716	24,917
Increase in inventories		(15,526)	(6,560)	(60,183)
Increase (decrease) in trade and other payables		(56)	4,401	40,376
Increase in net defined benefit liabilities		1,052	1,867	17,128
Other, net		(2,284)	(4,041)	(37,073)
Subtotal		65,610	76,191	699,000
Dividends received		1,683	1,689	15,495
Interest received		778	989	9,073
Interest paid		(709)	(766)	(7,028)
Income taxes paid		(20,932)	(18,316)	(168,037)
Net cash provided by operating activities		46,430	59,787	548,505
Cash flows from investing activities				
Net decrease (increase) in time deposits		(290)	2,288	20,991
Net (increase) decrease in short-term investment securities		16,981	(54)	(495)
Purchase of property, plant and equipment		(50,786)	(50,629)	(464,486)
Proceeds from sale of property, plant and equipment		433	225	2,064
Purchase of intangible assets		(3,208)	(2,931)	(26,890)
Purchase of shares of subsidiaries resulting in change in scope of consolidation	5	(13,842)	—	—
Purchase of investment securities		(1,498)	(1,575)	(14,450)
Proceeds from sale and redemption of investment securities		3,424	363	3,330
Other, net		(95)	(613)	(5,624)
Net cash used in investing activities		(48,883)	(52,926)	(485,560)
Cash flows from financing activities				
Net (decrease) increase in short-term loans payable	31	15,722	(16,404)	(150,495)
Proceeds from long-term loans payable	31	10,100	30,000	275,229
Repayments of long-term loans payable	31	(9,962)	(9,924)	(91,046)
Proceeds from issuance of bonds	31	19,892	29,852	273,872
Redemption of bonds	31	(25,000)	—	—
Repayments of lease liabilities	31	(2,231)	(2,637)	(24,193)
Purchase of treasury stock	21	(5,002)	(10,074)	(92,422)
Dividends paid to owners of the parent	22	(13,604)	(14,596)	(133,908)
Dividends paid to noncontrolling interests		(242)	(254)	(2,330)
Capital contribution from noncontrolling interests		—	1,470	13,486
Other, net		35	—	—
Net cash provided by (used in) financing activities		(10,291)	7,432	68,183
Effect of exchange rate change on cash and cash equivalents		(330)	(2,605)	(23,899)
Net increase (decrease) in cash and cash equivalents		(13,075)	11,687	107,220
Cash and cash equivalents at the beginning of the period	6	87,479	74,404	682,606
Cash and cash equivalents at the end of the period	6	¥ 74,404	¥ 86,092	\$ 789,835

Notes to Consolidated Financial Statements

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries

1. Reporting Entity

NGK Spark Plug Co., Ltd. (hereafter, “the Company”) is a company domiciled in Japan. Information on the address of its registered head office and main business offices is presented on the Company’s website (<https://www.ngkntk.co.jp/>).

The consolidated financial statements of the Company, as of March 31, 2020, are composed of the financial statements of the Company and its consolidated subsidiaries (hereafter, “the Group”) and its interests in associates.

The Group is primarily engaged in manufacturing and sale of automotive components and technical ceramics consisting of semiconductor and ceramics components.

2. Basis of Preparation

(1) Statement of compliance with IFRS

As the Company meets all the requirements of “Specified Company Complying with Designated International Accounting Standards” stipulated in Article 1-2 of the Ordinance on Consolidated Financial Statements, it prepares its consolidated financial statements in accordance with IFRS pursuant to the provisions of Article 93 of the Ordinance.

The Group adopted IFRS for the first time in the consolidated fiscal year ended March 31, 2020, and the date of transition to IFRS (hereafter, “date of transition”) is April 1, 2018. The impact of the transition to IFRS on the Group’s financial position, business performance and cash flows as of the date of transition and comparative year are described in “Note 36: First time adoption.”

With the exception of IFRSs that are not early adopted and exemptions permitted under the provisions of IFRS 1 “First-time Adoption of International Financial Reporting Standards” (hereafter, “IFRS 1”), the Group’s accounting policies comply with IFRS effective as of March 31, 2020.

The Group’s consolidated financial statements for the fiscal year ended March 31, 2020 were approved by Takeshi Kawai, Representative Director, President and Chief Operating Officer, on June 24, 2020.

(2) Basis of measurement

The consolidated financial statements of the Group have been prepared on a historical cost basis, except for financial instruments, etc., measured at fair value as stated in “Note 3: Significant Accounting Policies.”

(3) Functional currency and presentation currency

The consolidated financial statements of the Group are presented in Japanese yen, which is the functional currency of the Company. All financial information presented in Japanese yen is rounded down to the nearest million.

The translation of the Japanese yen amounts into U.S. dollar amounts is included solely for the convenience of readers outside Japan, using the approximate exchange rate prevailing as at March 31, 2020, which was ¥109 to U.S. \$1.00. The translation should not be construed as a representation that the Japanese yen amounts have been, could have been or could in the future be converted into U.S. dollars at this or any other rate of exchange.

Certain comparative figures have been reclassified to conform to the current year’s presentation.

(4) Early adoption of new standards

No items to report.

(5) New standards and interpretations not yet adopted by the Group

None of the new standards and interpretations not yet adopted have a material impact on the Group’s consolidated financial statements.

(6) Use of estimates and judgments

The preparation of the consolidated financial statements in accordance with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results could differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in future periods when these revisions have an impact.

Information regarding judgments made in applying accounting policies that have a significant effect on the amounts recognized in the consolidated financial statements is contained in the notes below.

- Accounting treatment of agreements that include lease contracts – “Note 3: Significant accounting policies (9) Leases” and “Note 12: Leases.”

The following notes contain information about assumption and estimation uncertainties that may have a significant risk of resulting in material adjustment to the carrying amounts of assets and liabilities in the fiscal year ending March 31, 2021.

- Impairment losses on non-financial assets – “Note 3: Significant accounting policies (10) Impairment losses of non-financial assets” and “Note 11: Impairment losses of non-financial assets.”
- Measurement of defined benefit obligations – “Note 19: Employee benefits”
- Recoverability of deferred tax assets – “Note 3: Significant accounting policies (18) Income taxes” and “Note 28: Income taxes”
- Measurement of financial instruments – “Note 20: Financial instruments”

Regarding the impact of COVID-19, there is no unified view on when it will be fully contained, so there is uncertainty regarding the future impact on the Group.

Assuming that this effect will be generally contained in the fiscal year ending March 31, 2021, the Group made accounting estimates for impairment of non-financial assets and recoverability of deferred tax assets during the current consolidated fiscal year. There are uncertainties in this assumption, and if the effect is prolonged, it could affect the financial condition and operating results of the Group for the next consolidated fiscal year.

3. Significant Accounting Policies

The significant accounting policies of the Group are as follows and are applied continuously to all periods presented in the consolidated financial statements, unless otherwise stated.

(1) Basis of consolidation

The consolidated financial statements of the Group include financial statements of the Company and its consolidated subsidiaries, and interests in associates that are accounted for using the equity method.

1) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it has power over the entity, is exposed to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

The financial statements of the subsidiaries are included in the consolidated financial statements from the date on which control is obtained until the date on which control is lost. In the event that the Group disposes of a portion of its ownership interest in a subsidiary while control is retained, the change in ownership interest of the Group is accounted for as an equity transaction, and the difference between the adjustment of noncontrolling interests and the fair value of the consideration is directly recognized in equity as equity attributable to owners of the parent. If control is lost, any gain or loss arising from the loss of control is recognized in profit or loss.

The consolidated financial statements include investments in subsidiaries with different fiscal year-ends from that of the Company and for which it is impracticable to align fiscal year-ends due to laws and regulations of the location where the subsidiaries operate that require different fiscal year-ends from that of the parent. For such subsidiaries, financial statements prepared with a provisional closing date set on the same date as that of consolidated financial statements are used.

Where the accounting policies applied by a subsidiary are different from those applied by the Group, adjustments are made as necessary to the relevant subsidiary’s financial statements. Intra-group balances of payables and receivables and intra-group transactions, as well as unrealized gains or losses arising from intra-group transactions, are eliminated on consolidation.

2) Associates

Associates are entities over which the Group has significant influence over financial and operating policy decisions, but not control or joint control. Investments in associates are accounted for using the equity method.

Investments in associates are initially recognized at cost. The Company’s investments include goodwill recognized on acquisition. The Group’s share in the profit or loss and other comprehensive income of its associates is recognized as changes in the Group’s investments in associates from the date significant influence is acquired until the date significant influence ceases.

The consolidated financial statements include investments in associates whose fiscal year-end is different from that of the Company, as it is impracticable to align the dates due to relationships with other shareholders or other factors. For such associates, financial statements prepared with a provisional closing date set in line with the consolidated fiscal year-end are used.

If the Group’s share of losses of an associate exceeds its interest in the associate, the carrying amount of the investment is reduced to zero and no further losses are recognized unless the Group has incurred obligations or made payments on behalf of the associate.

If an associate uses accounting policies that differ from those of the Group, the associate’s financial statements are adjusted as necessary.

(2) Business combinations

Business combinations are accounted for using the acquisition method. Noncontrolling interests are measured at the proportionate share in the fair value of the acquiree’s identifiable assets and liabilities.

Where the aggregate of the consideration transferred, the amount of any noncontrolling interest in the acquiree and, in a business combination achieved in stages, the acquisition-date fair value of the acquirer’s previously held equity interest in the acquiree exceeds the net amount of identifiable assets acquired and liabilities assumed at the date of acquisition, the excess is recognized as goodwill. Conversely, if this aggregate consideration is less than the net amount of the identifiable assets acquired and liabilities assumed, the difference is recognized as a gain in profit or loss.

Acquisition-related costs of business combinations are accounted for as expenses when incurred, except for costs of issuing debt or equity securities.

If the initial accounting treatment of a business combination is not completed by the end of the fiscal year in which the business combination took place, provisional amounts for the items for which accounting is incomplete are reported. In the event the Company obtained new information about facts and circumstances which were in existence at the acquisition date that, if known, would have affected the measurement of the amounts recognized on the acquisition date, and that such information was obtained during the period in which it is likely to have affected the measurement of the amounts recognized (hereafter, the “measurement period”), the provisional amounts recognized on the acquisition date are adjusted retrospectively to reflect such information. The new information may require additional recognition of assets and liabilities. The measurement period shall not exceed one year.

Business combination under common control is a business combination involving entities or businesses in which all the combining entities or businesses are ultimately controlled by the same party or parties both before and after the business combination and that control is not transitory. Such transaction continues to be accounted for using carrying amounts.

(3) Foreign currency translation

1) Foreign currency-denominated transactions

Foreign currency-denominated transactions, namely transactions in currencies other than the functional currency of each company, are translated into the functional currency using the exchange rates in effect on the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated into the functional currency at the exchange rate of the fiscal year-end date. Non-monetary assets and liabilities that are measured at fair value in a foreign currency are translated into the functional currency using the exchange rate at the date when the fair value was determined. Exchange differences arising from the translation are recognized in profit or loss.

Non-monetary items denominated in a foreign currency that are measured at historical cost are translated using the exchange rate in effect on the date of the transaction.

2) Foreign operations

Assets and liabilities of foreign operations (consolidated subsidiaries and branch offices) are translated into the presentation currency at the exchange rate as of the fiscal year-end date. Profit or loss and cash flows are translated into the presentation currency at the exchange rates of the transaction dates or the average exchange rate for the period that approximates the exchange rates of the transaction dates. Translation differences arising as a result are recognized in other comprehensive income.

In the event of disposal of the entire ownership interest in a foreign operation or a part of the interest that results in a loss of control, the cumulative amount of the exchange differences of the foreign operation that were recognized in other comprehensive income are reclassified to profit or loss in the period when the disposal occurred.

(4) Financial instruments

1) Non-derivative financial assets

(i) Initial recognition and measurement

Stocks and bonds are initially recognized on the trade date. All other financial assets are initially recognized on the date on which the Group becomes a party to the contractual provisions of these instruments.

At initial recognition, a financial asset is classified either as financial asset measured at amortized cost or that measured at fair value, as follows.

(a) Financial assets measured at amortized cost

A financial asset is classified as financial asset measured at amortized cost if both of the following two conditions are met.

- The financial asset is held within a business model whose objective is to hold assets in order to collect contractual cash flows.
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

(b) Financial assets measured at fair value

Financial assets other than those measured at amortized cost described above are classified as financial assets measured at fair value through profit or loss or other comprehensive income.

For debt instruments, these are classified as debt instrument asset measured at fair value through other comprehensive income if the following conditions are met.

- The financial asset is held within a business model whose objective is to hold assets in order to collect contractual cash flow or sell financial assets.
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

With respect to investments in equity instrument for purposes other than sale, the option is available at initial recognition to make an irrevocable election to present subsequent fair value changes in other comprehensive income. The Group makes such designation for individual assets.

Except for financial assets that are classified as financial assets measured at fair value through profit or loss, financial assets are individually measured at fair value plus transaction costs that are directly attributable to the asset.

Trade receivables that do not contain a significant financial component are measured at transaction price.

For financial assets that are measured at fair value through profit or loss, transaction costs are recognized in profit or loss when incurred.

(ii) Subsequent measurement

(a) Financial assets measured at amortized cost

These are recognized at amortized cost calculated by the effective interest method, and interest income is recognized as “Finance income” in profit or loss.

(b) Financial assets measured at fair value

For financial assets measured at fair value through profit or loss, changes in fair value are recognized in profit or loss.

For debt instrument assets measured at fair value through other comprehensive income, changes in fair value, other than impairment gains or losses and foreign currency gains or losses, are recognized as other comprehensive income until derecognition or change in classification. When the financial asset is derecognized, the gains or losses recognized in the prior years are reclassified from other comprehensive income to profit or loss.

For equity instruments for which the Group elected to designate as financial assets measured at fair value through other comprehensive income, changes in fair value are recognized as other comprehensive income. Cumulative gains or losses are reclassified to retained earnings on derecognition or if there is a significant decrease in fair value. Dividends, however, are recognized in profit or loss as “Finance income.”

(iii) Impairment of financial assets

With respect to financial assets measured at amortized cost and debt instrument assets measured at fair value through other

comprehensive income, the Group recognizes allowance for doubtful accounts in an amount equal to lifetime expected credit loss if credit risk on the financial asset has increased significantly since initial recognition. If credit risk of a financial asset has not increased significantly since initial recognition, an amount equal to 12-month expected credit loss is recognized as allowance for doubtful accounts. Assessment on whether credit risk of a financial asset has increased significantly since initial recognition is described in “Note 20: Financial instruments (2) Financial risk management 4) Credit risk.”

However, for trade receivables, allowance for doubtful accounts is always recognized at an amount equal to lifetime expected credit loss. Estimates of expected credit losses of financial instruments are measured in a manner that reflects the following:

(a) An unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes

(b) Time value of money

(c) Reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions

The amount associated with the above measurement is recognized in profit or loss.

(iv) Derecognition of financial assets

The Group derecognizes a financial asset when the contractual rights to the cash flows from the financial asset expire, or when the Group assigns the financial asset whereby substantially all the risks and rewards of ownership of the financial asset are transferred.

2) Non-derivative financial liabilities

(i) Initial recognition and measurement

Financial liabilities are classified as amortized cost. A financial liability is initially recognized at amortized cost on the trade date on which the Group becomes a party to the contractual provisions of the instrument.

A financial liability measured at amortized cost is initially recognized at fair value less transaction costs directly attributable to its issuance.

(ii) Subsequent measurement

A financial liability is recognized at amortized cost calculated by the effective interest method, and interest is recognized as “Finance expenses” in profit or loss.

(iii) Derecognition of financial liabilities

A financial liability is derecognized when it is extinguished, which is when the obligation specified in the contract is either discharged, cancelled or expires.

3) Derivatives

The Group uses derivative transactions, including foreign exchange forward contracts, interest rate and currency swaps, and currency options, to hedge currency and interest rate fluctuation risks.

Derivatives are initially recognized at fair value. After initial recognition, the fair value is remeasured and changes are recognized in profit or loss.

4) Offsetting financial assets and financial liabilities

Financial assets and financial liabilities are offset and presented as a net amount only when the Group has a legally enforceable right to set off the recognized amounts and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

(5) Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, demand deposits, and short-term, highly liquid investments with a maturity of 3 months or less that are readily convertible to cash and subject to insignificant risk of changes in value.

(6) Inventories

Inventories are measured at the lower of acquisition cost and net realizable value. The acquisition cost of inventories is mainly calculated by the moving average method and includes all costs of purchasing and processing, as well as other costs incurred in bringing the inventories to their present location and condition. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale.

(7) Property, plant and equipment

Property, plant and equipment are measured using the cost model and are stated at cost less accumulated depreciation and accumulated impairment losses.

The cost of property, plant and equipment includes costs directly attributable to the acquisition of property, plant and equipment; estimated costs of dismantling and removing the asset and restoring the site; and borrowing costs that satisfy the requirements for capitalization. If the useful life of each component of an item of property, plant and equipment varies, it is accounted for as a separate item of property, plant and equipment.

Property, plant and equipment, except for land and construction in progress, are depreciated using the straight-line method over the estimated useful life of each asset from the date when it has become available for use. The estimated useful lives of major assets are as follows.

Buildings and structures: 8 to 50 years

Machinery, equipment and vehicles: 4 to 10 years

The depreciation method, residual values and useful lives are reviewed annually and adjusted where necessary.

Items of property, plant and equipment are derecognized on disposal or when no future economic benefit is expected from their continued use or disposal. The gain or loss arising from derecognition is recognized in profit or loss at the time of derecognition of the relevant item of property, plant and equipment.

(8) Goodwill and intangible assets

- 1) Goodwill

Goodwill is not amortized and is allocated to an asset, a cash-generating unit or a group of cash-generating units that are identified according to location and type of business. It is tested for impairment at the same time every year or when an indication of impairment is identified. Impairment loss on goodwill is recognized in profit or loss and no reversal is made.

After initial recognition, goodwill is stated at cost less accumulated impairment losses.
- 2) Capitalization of development cost

Expenditures on research activities to gain new scientific or technical knowledge are expensed when incurred. Expenditures on development activities are capitalized only if the Company can demonstrate that all of the following requirements are met.

(a) The technical feasibility of completing the intangible asset so that it will be available for use or sale

(b) Its intention to complete the intangible asset and use or sell it

(c) Its ability to use or sell the intangible asset

(d) How the intangible asset will generate probable future economic benefits

(e) The availability of adequate technical, financial and other resources to complete the development and use or sell the intangible asset

(f) Its ability to measure reliably the expenditure attributable to the intangible asset during its development

The amount initially recognized for internally generated intangible asset is the sum of expenditures incurred from the time when the intangible asset first meets all the recognition criteria listed above to the completion of the development phase. This is amortized using the straight-line method for the expected period when the costs incurred for development would be recovered. Cost at initial recognition less accumulated amortization and accumulated impairment losses is recognized in the consolidated statement of financial position.

Development cost that does not meet the above requirements for capitalization is recognized in profit or loss when incurred.
- 3) Other intangible assets

Intangible assets are measured at cost less accumulated amortization and accumulated impairment losses.

Intangible assets acquired separately are measured at cost at the time of initial recognition. Intangible assets acquired in business combinations are measured at fair value as of the date of the business combination.

Acquisition and development costs of software for internal use are accounted for as intangible asset if it is probable that the future economic benefits that are attributable to the asset will flow to the Group.

Intangible assets with finite useful lives are amortized using the straight-line method over their estimated useful lives. The estimated useful lives of major intangible assets are as follows.

Software: 5 years

Development assets: 5 to 10 years

Customer-related assets: 8 years

Amortization method, residual value and residual useful life are reviewed annually and adjusted where necessary.

Intangible assets are derecognized on disposal or when no future economic benefit is expected from their continued use or disposal. The gain or loss arising from derecognition of an intangible asset is recognized in profit or loss at the time of derecognition of the asset.

(9) Leases

- 1) Lessee

The Group assesses whether an arrangement is or contains a lease at the inception of the arrangement.

Lease liability in a lease transaction is measured on the commencement date of the lease at the discounted present value of the lease payments over the lease term that are not yet paid. A right-of-use asset is initially measured at cost, consisting of the amount of the lease liability at the initial measurement, with adjustments made for initial direct costs, any lease payments made before or at the commencement date, etc., restoration obligations required under the lease agreement and other costs. The right-of-use asset is depreciated systematically over the lease term. The lease term includes the periods covered by an option to extend or an option to terminate if the Group is reasonably certain to exercise the extension option or not exercise the termination option on the basis of past practice relating to the period over which the underlying asset has been used and the economic reasons for doing so.

Lease payments are allocated between finance expenses and repayable portion of the remaining balance of lease liability, to produce a constant periodic rate of interest on the remaining balance of the lease liability. Finance expenses are shown in the consolidated statement of profit or loss separately from the depreciation charge for the right-of-use asset.

For leases with the lease terms of 12 months or less, and leases for which the underlying assets are of low value, lease payments for such leases are recognized as expenses on either a straight-line basis or some other systematic basis over the lease term.
- 2) Lessor

The Group classifies a lease as a finance lease if substantially all of the risk and rewards incidental to ownership of the underlying asset are transferred to the lessee. All other lease contracts are classified as operating leases.

In operating lease transactions, lease payments are recognized as revenue over the lease term using the straight-line method.

(10) Impairment losses of non-financial assets

For non-financial assets, excluding inventories and deferred tax assets, an assessment is made at the end of each fiscal year as to whether there is any indication that an asset may be impaired for each asset or cash-generating unit to which an asset is allocated. If such indication exists, an impairment test is performed.

An individual asset or cash-generating unit on which impairment tests are performed is the smallest unit (or group of units) which, based on management accounting categories, generates independent cash flows. Corporate assets are allocated to individual cash-generating units where a reasonable and consistent allocation method can be identified. Idle property is grouped for each individual asset.

The recoverable amount of an individual asset or a cash-generating unit is the higher of its value in use and its fair value less costs of disposal. In calculating value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects the time value of money and the risks specific to the asset. For the calculation of fair value less costs of disposal, an appropriate valuation model is used that is supported by available fair value indicators.

If the carrying amount of an asset or a cash-generating unit exceeds the recoverable amount, an impairment loss is recognized in profit or loss, and the carrying amount of the asset is reduced to the recoverable amount. Impairment loss recognized in relation to a cash-generating unit is allocated first to reduce the carrying amount of any goodwill allocated to the cash-generating unit, and then to the other assets in the unit proportionately to the carrying amount of each asset in the unit.

In calculating the recoverable amount, certain assumptions are made regarding the estimated future cash flows and discount rates, etc. These assumptions may be affected by future uncertain economic conditions, such as long-term effects of COVID-19. If it is necessary to revise these assumptions because of these future uncertain economic conditions, it could have a significant impact on the recoverable amounts recognized in the following fiscal years' consolidated financial statements.

Impairment loss on goodwill is not reversed. For impairment loss on non-financial assets other than goodwill, the recoverable amount of the asset is estimated if there is an indication that the impairment loss may no longer exist or may have decreased, and the impairment loss is reversed if the recoverable amount exceeds the carrying amount net of depreciation or amortization. Reversal of the impairment loss on an asset is recognized in profit or loss only to the extent that the carrying amount of the asset does not exceed the carrying amount that would have been determined had no impairment loss been recognized in prior years.

(11) Employee benefits

- 1) Post-employment benefits

The Company and certain consolidated subsidiaries have defined benefit-type corporate pension plans and lump-sum retirement benefit plans, while certain overseas consolidated subsidiaries have defined contribution plans.

i) Defined benefit plans

The present value of defined benefit obligations as well as related current and past service costs are determined using the projected unit credit method.

The discount rate is determined by reference to market yields at the fiscal year end on high-quality corporate bonds for the corresponding discount period that is set based on the period up to the expected future benefit payment dates in every fiscal year.

Asset and liability associated with post-employment benefit plans are recognized at the present value of defined benefit obligation less the fair value of plan assets. Service cost and net interest on the net defined benefit liability are recognized in profit or loss.

Gains and losses arising from remeasurement of defined benefit plans are recognized in full in other comprehensive income in the fiscal year that these are incurred and immediately transferred to retained earnings. All past service costs are recognized in profit or loss when incurred.

ii) Defined contribution plans

For defined contribution plans, the contribution payable to the plan is recognized as an expense when the related service is rendered by the employees.
- 2) Short-term employee benefits

For short-term employee benefits, the undiscounted amount of benefits is recognized as an expense when the related service is rendered.

With respect to bonus payments and paid leave costs, the expected amount to be paid under relevant arrangements is recognized as liability when the Group has legal or constructive obligation to make such payments and a reliable estimate of the expected obligations can be made.
- 3) Other long-term employee benefits

The obligations with respect to long-term employee benefits other than post-employment benefits are measured at the estimated future benefits that employees have earned in return for their services rendered in the current and prior fiscal years, discounted to the present value.

(12) Share-based payments

The Company has adopted equity-settled share-based payment plans for its directors (excluding outside directors) and executive officers in the form of Board Incentive Plan Trust (hereafter, "BIP Trust") and Employee Stock Ownership Plan Trust (hereafter, "ESOP Trust"). Shares of the Company held by the two trusts are recognized as treasury shares. Compensation for services received is measured with reference to the fair value of the Company's shares as of the date of grant, and is recognized as an expense over the vesting period. The same amount is recognized as an increase in equity.

(13) Provisions

Provisions are recognized when the Group has a present legal or constructive obligation as a result of past events, when it is probable that an outflow of economic resources would be required to settle the obligation and a reliable estimate can be made of the amount of such resources outflow.

When the impact of the time value of money is material, provisions are measured by the present value of estimated expenditure required to settle the obligation. The present value is measured by discounting using a pre-tax rate that reflects the time value of money and the specific risks of the liability. The increase in the provision reflecting the effects arising from the passage of time is recognized as finance expenses.

(14) Shareholders' equity

1) Ordinary shares

With respect to equity instruments issued by the Company, the proceeds are recorded in capital stock and capital surplus, and costs directly attributable to issue of the shares (net of tax effects) are recognized as a deduction from capital surplus.

2) Treasury shares

Treasury shares are measured at acquisition cost and recognized as a deduction from equity. Gains or losses from purchase, sale and disposal of treasury shares are not recognized. The difference between the carrying amount and the consideration received from disposal is recognized as capital surplus.

(15) Revenue

The Group recognizes revenue based on the following five-step approach.

Step 1: Identify the contract with the customer

Step 2: Identify the performance obligations in the contract

Step 3: Determine the transaction price

Step 4: Allocate the transaction price to the performance obligations in the contract

Step 5: Recognize revenue when the entity satisfies a performance obligation

The Group engages mainly in the sale of spark plugs, glow plugs, various automotive sensors, ceramic engine parts and other automotive components, IC packages and other semiconductor components, and cutting tools for machine tools and ceramics products for industrial use. Revenue from the sale of these goods is recognized when control of the goods is passed to the customer and performance obligation is satisfied. Revenue is measured at the amount of the consideration promised under the contract with the customer, less rights of return, discounts, rebates, etc.

(16) Government grants

A government grant is recognized at fair value when there is reasonable assurance that all the conditions attached to the grant are complied with and the grant will be received.

Government grant associated with revenue is recognized in profit or loss on a systematic basis over the period that the related costs for which it is intended to compensate are recognized.

For government grant associated with assets, the asset's carrying amount is measured by deducting the grant amount from the acquisition cost of the asset.

(17) Finance income and finance expenses

Finance income consists mainly of interest income, dividend income, and foreign exchange gain. Interest income is recognized when incurred using the effective interest method. Dividend income is recognized when the Group's right to receive payment is established.

Finance expenses consist mainly of interest expense and foreign exchange loss. Interest expense is recognized when incurred using the effective interest method.

(18) Income taxes

Income tax expense is stated as the total of current taxes and deferred taxes.

Current taxes are measured at the expected amount of taxes payable to or recoverable from tax authorities, using tax rates enacted or substantively established by the fiscal year-end date. These are recognized in profit or loss for the fiscal year, except for those related to business combinations and items that are recognized either in other comprehensive income or directly in equity.

Deferred tax assets and deferred tax liabilities are measured at the tax rates that are expected to apply to the fiscal year when the asset is realized or the liability is settled, based on tax rates that have been enacted or substantively enacted by the end of the fiscal year. Deferred tax assets and deferred tax liabilities are measured based on temporary differences between their carrying amounts for accounting purposes and tax base amounts, and tax loss carryforwards and tax credit carryforwards. A deferred tax asset is recognized for deductible temporary difference, tax loss carryforward and tax credit carryforward only to the extent it is probable that future taxable profit will be available against which the deductible temporary difference, tax loss carryforward or tax credit carryforward can be utilized.

The expected amount of taxable income in the future will fluctuate depending on the business performance at that time, so it may be affected by uncertain future economic conditions such as the prolongation of COVID-19. When factors that have a significant effect on the status of taxable income in the following years emerge, the amount recognized in the following fiscal years' consolidated financial statements may be materially affected.

Deferred tax assets and deferred tax liabilities are not recognized for temporary difference arising from initial recognition of an asset or liability in a transaction that is not a business combination and which affects neither accounting income nor taxable income at the time of transaction. Furthermore, deferred tax liabilities are not recognized if the taxable temporary difference arises from initial recognition of goodwill.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in consolidated subsidiaries and associates. However, deferred tax liabilities are not recognized if it is possible to control the timing of the reversal of the temporary differences and probable that the temporary differences will not be reversed in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with investments in consolidated subsidiaries and associates are recognized only to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available.

Deferred tax assets and deferred tax liabilities are offset only when there is a legally enforceable right to set off current tax assets against current tax liabilities and when these relate to income taxes levied on the same taxable entity by the same tax authority.

(19) Earnings per share

Basic earnings per share are calculated by dividing profit for the year attributable to owners of the parent by the weighted-average number of ordinary shares outstanding during the fiscal year, adjusted for the number of treasury shares.

4. Segment Information

(1) Summary of reportable segments

The reportable segments of the Group are the business units for which the Group is able to obtain separate financial statements in order for the Board of Directors to conduct periodic reviews to determine allocation of management resources and evaluate business results.

The Group has its business units identified by product. Each business unit plans its comprehensive domestic and overseas strategies for its own products and conducts its own business activities. Therefore, the Group is composed of business units, identified by products organized in segments.

For the purpose of this reporting, several business segments are grouped together in consideration of the product nature, markets and other similarities, to present the two reportable segments of "Automotive components" and "Technical ceramics" consisting of "Semiconductor" and "Ceramics" subsegments.

"Automotive components" is a segment that manufactures and sells primarily spark plugs, exhaust gas sensors, and other automotive components. The "Semiconductor" subsegment, which is the "Technical ceramics" segment, manufactures and sells semiconductors, IC packages for various devices, multilayer circuit boards, and other products. The "Ceramics" subsegment manufactures and sells cutting tools, industrial ceramics and products for semiconductor manufacturing equipment.

(2) Segment revenue and results

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)

	Millions of yen								
	Reportable segments				Total	Other (Note 1)	Total	Adjustments	Consolidated (Note 2)
	Automotive components	Technical ceramics		Total					
Revenue									
External customers	¥356,422	¥17,089	¥41,010	¥58,100	¥414,522	¥10,586	¥425,109	—	¥425,109
Inter-segment	—	—	—	—	—	—	—	—	—
Total	¥356,422	¥17,089	¥41,010	¥58,100	¥414,522	¥10,586	¥425,109	—	¥425,109
Segment profit (loss)	¥ 59,296	¥ (3,258)	¥ 3,069	¥ (188)	¥ 59,108	¥ (3,786)	¥ 55,321	—	¥ 55,321
Finance income									¥ 3,351
Finance expenses									¥ (2,023)
Profit before income taxes									¥ 56,649
Other material items									
Depreciation and amortization	¥ 21,582	¥ 1,283	¥ 2,904	¥ 4,187	¥25,769	¥ 854	¥ 26,624	—	¥ 26,624
Share of profit (loss) of investments accounted for using the equity method	¥ (69)	—	—	—	¥ (69)	¥ 567	¥ 497	—	¥ 497
Impairment losses	—	¥ 1,675	—	¥ 1,675	¥ 1,675	—	¥ 1,675	—	¥ 1,675

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

	Millions of yen								
	Reportable segments				Total	Other (Note 1)	Total	Adjustments	Consolidated (Note 2)
	Automotive components	Technical ceramics		Total					
Revenue									
External customers	¥348,711	¥16,517	¥35,702	¥52,220	¥400,931	¥25,141	¥426,073	—	¥426,073
Inter-segment	—	—	—	—	—	—	—	—	—
Total	¥348,711	¥16,517	¥35,702	¥52,220	¥400,931	¥25,141	¥426,073	—	¥426,073
Segment profit (loss)	¥ 51,757	¥ 538	¥ (1,014)	¥ (475)	¥ 51,281	¥ (2,834)	¥ 48,447	—	¥ 48,447
Finance income									¥ 3,068
Finance expenses									¥ (6,766)
Profit before income taxes									¥ 44,749
Other material items									
Depreciation and amortization	¥ 25,820	¥ 1,045	¥ 3,487	¥ 4,533	¥ 30,353	¥ 1,598	¥ 31,952	—	¥ 31,952
Share of profit of investments accounted for using the equity method	¥ 502	—	—	—	¥502	¥632	¥ 1,135	—	¥ 1,135
Impairment losses	—	—	—	—	—	—	—	—	—

	Thousands of U.S. dollars								
	Reportable segments								Consolidated (Note 2)
	Technical ceramics				Total	Other (Note 1)	Total	Adjustments	
	Automotive components	Semiconductor	Ceramics	Total					
Revenue									
External customers	\$3,199,183	\$151,532	\$327,541	\$479,083	\$3,678,266	\$230,651	\$3,908,927	—	\$3,908,927
Inter-segment	—	—	—	—	—	—	—	—	—
Total	\$3,199,183	\$151,532	\$327,541	\$479,083	\$3,678,266	\$230,651	\$3,908,927	—	\$3,908,927
Segment profit (loss)	\$ 474,835	\$ 4,936	\$ (9,303)	\$ (4,358)	\$ 470,468	\$ (26,000)	\$ 444,468	—	\$ 444,468
Finance income									\$ 28,147
Finance expenses									\$ (62,073)
Profit before income taxes									\$ 410,541
Other material items									
Depreciation and amortization	\$ 236,881	\$ 9,587	\$ 31,991	\$ 41,587	\$ 278,468	\$ 14,661	\$ 293,138	—	\$ 293,138
Share of profit of investments accounted for using the equity method	\$ 4,606	—	—	—	\$ 4,606	\$ 5,798	\$ 10,413	—	\$ 10,413
Impairment losses	—	—	—	—	—	—	—	—	—

(Notes) 1. "Other" represents new businesses such as medical, environmental and energy-related products, as well as material sales and welfare program service, which are not included in reportable segments.
2. Segment profit (loss) is reconciled to operating profit in the consolidated financial statements.

(3) Information on products and services

Disclosure is omitted as the same information is presented in “(1) Summary of reportable segments” and “(2) Segment revenue and results.”

(4) Information by geographical region as of and for the years ended March 31, 2019 and 2020 are as follows.

1) Revenue from external customers

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Japan	¥ 89,401	¥ 81,408	\$ 746,862
United States	114,803	117,786	1,080,606
Germany	83,485	87,503	802,780
Other	137,419	139,375	1,278,670
Total	¥425,109	¥426,073	\$3,908,927

(Note) Revenue is classified based on the location of the Company and its consolidated subsidiaries.

2) Noncurrent assets

	Date of transition (April 1, 2018)	Millions of yen		Thousands of U.S. dollars
		2019	2020	2020
Japan	¥173,820	¥194,358	¥204,395	\$1,875,183
Asia	22,176	32,900	38,706	355,101
Other	26,932	36,603	34,297	314,651
Total	¥222,929	¥263,862	¥277,399	\$2,544,945

(5) Information on principal customers

This information is omitted because no single customer accounts for 10% or more of the revenue presented in the consolidated statement of profit or loss.

5. Business Combinations

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)

(Business combination by acquisition)

(1) Outline of the business combination

1) Names and business description of the acquired companies

Names of the acquired companies	CAIRE Inc. Chart BioMedical Limited Chart BioMedical (Chengdu) Co., Ltd.
Description of business	Manufacture and sale of oxygen concentrators

2) Main reasons for the business combination

The Company plans to further expand the oxygen concentrator business in the medical field given its growth potential. By acquiring the businesses of the acquired companies that are engaged in the oxygen-related business on a broad front with focus on their core business of oxygen concentrators and that possess a wide range of product groups, the Company aims to expand its business scope and acquire new sales channels and customers.

3) Date of acquisition

December 20, 2018

4) Legal form of the business combination

Share acquisition

5) Name of the acquired companies after the combination

Chart BioMedical Limited and Chart BioMedical (Chengdu) Co., Ltd. were renamed as CAIRE Medical Limited and CAIRE Medical Technology (Chengdu) Co., Ltd., respectively.

6) Ratio of voting rights acquired

100%

7) Main grounds for deciding on the acquiring company

The Company acquired 100% of the voting rights through share acquisition with cash paid as consideration.

(2) Breakdown of fair value of assets acquired, liabilities assumed and consideration transferred at the date of acquisition

	Millions of yen		
	Initial provisional fair value	Subsequent adjustments	Adjusted fair value
Fair value of assets acquired and liabilities assumed			
Cash and cash equivalents	¥ 2,271	¥ —	¥ 2,271
Trade and other receivables	2,177	—	2,177
Inventories	6,382	349	6,731
Property, plant and equipment	1,340	—	1,340
Intangible assets	1,697	3,021	4,719
Other assets	1,068	(2)	1,065
Trade and other payables	(1,845)	—	(1,845)
Other liabilities	(2,496)	(918)	(3,414)
Fair value of assets acquired and liabilities assumed, net	10,596	2,449	13,046
Goodwill	5,517	(2,349)	3,168
Total	16,113	100	16,214
Fair value of consideration transferred			
Cash	16,113	—	16,113
Amount payable (Note 5)	—	100	100
Total	¥16,113	¥ 100	¥16,214

(Notes) 1. Acquisition-related costs of ¥756 million arising from the business combination was recorded in “Selling, general and administrative expenses.”
2. Goodwill arising from the business combination represents future excess earnings power expected from future business development, and no part of it is tax deductible.
3. Face value of trade and other receivables acquired was ¥2,313 million, and their fair value was ¥2,177 million. Estimated unrecoverable amount was ¥135 million.
4. Purchase price allocation, which was provisionally made as of March 31, 2019, has been adjusted retrospectively as allocation was completed during the fiscal year ended March 31, 2019.
5. This represents the amount that was payable as of March 31, 2019 resulting from price adjustments after share acquisition.

(3) Cash flows arising from the acquisition

	Millions of yen
Cash and cash equivalents used for the acquisition	¥16,113
Cash and cash equivalents held by the acquired companies at the time of acquisition	(2,271)
Total	¥13,842

(4) Effects on business performance

Revenue generated after the date of acquisition was ¥4,863 million. Profit for the year is omitted because its effect is insignificant. Disclosure is omitted with respect to information on revenue and profit for the year assuming that the business combination took place at the beginning of the fiscal year as it is difficult to obtain accurate pre-acquisition financial information.

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

No items to report.

6. Cash and Cash Equivalents

The components of cash and cash equivalents as of the date of transition, March 31, 2019 and 2020 are as follows. The balance of “Cash and cash equivalents” in the consolidated statement of financial position at the date of transition, March 31, 2019 and 2020, agree with the respective balances in the consolidated statement of cash flows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Cash and deposits	¥46,779	¥39,704	¥49,892	\$457,725
Short-term investments	40,700	34,700	36,200	332,110
Total	¥87,479	¥74,404	¥86,092	\$789,835

(Note) Cash and cash equivalents are classified as financial assets measured at amortized cost.

7. Trade and Other Receivables

The components of trade and other receivables as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Notes and accounts receivable — trade	¥92,639	¥95,805	¥87,940	\$806,789
Other accounts receivable	4,097	4,506	4,664	42,789
Total	¥96,736	¥100,311	¥92,604	\$849,578

(Note) Trade and other receivables are classified as financial assets measured at amortized cost.

8. Inventories

The components of inventories as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Finished goods	¥51,260	¥ 60,642	¥ 59,997	\$ 550,431
Work in progress	32,374	34,465	32,779	300,725
Raw materials and supplies	14,111	20,627	23,943	219,661
Total	¥97,746	¥115,735	¥116,720	\$1,070,826

The amounts of inventories recognized as expenses and included in cost of sales for the fiscal years ended March 31, 2019 and 2020 were approximately the same as “Cost of sales” amounts in the consolidated statement of profit or loss.

The amounts of write-downs of inventories that were included in cost of sales and recognized as expenses are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Amount of write-downs	¥590	¥947	\$8,688

9. Property, Plant and Equipment

(1) Changes

Changes in the carrying amounts of property, plant and equipment are as follows.

	Millions of yen					
	Land	Buildings and structures	Machinery, equipment and vehicles	Construction in progress	Other	Total
April 1, 2018	¥27,787	¥68,563	¥ 95,066	¥ 11,027	¥4,065	¥206,510
Acquisitions	41	75	645	55,958	182	56,902
Acquisitions through business combinations	114	723	426	16	60	1,340
Depreciation (Note 1)	—	(5,510)	(16,095)	—	(1,224)	(22,830)
Impairment losses (Note 2)	—	—	(1,675)	—	—	(1,675)
Sales or disposals	(73)	(282)	(910)	—	(64)	(1,330)
Foreign currency exchange differences	30	91	(263)	(52)	(27)	(221)
Other (Note 3)	(0)	7,716	31,067	(41,324)	1,857	(683)
March 31, 2019	¥27,900	¥71,376	¥108,261	¥ 25,625	¥4,848	¥238,012
Acquisitions	0	234	813	44,841	188	46,078
Acquisitions through business combinations	—	—	—	—	—	—
Depreciation (Note 1)	—	(6,039)	(19,266)	—	(1,549)	(26,855)
Impairment losses (Note 2)	—	—	—	—	—	—
Sales or disposals	(9)	(157)	(621)	(1)	(17)	(807)
Foreign currency exchange differences	(245)	(991)	(2,942)	(799)	(186)	(5,164)
Other (Note 3)	88	10,581	37,467	(50,535)	2,144	(252)
March 31, 2020	¥27,734	¥75,005	¥123,711	¥ 19,130	¥ 5,428	¥251,010

	Thousands of U.S. dollars					
	Land	Buildings and structures	Machinery, equipment and vehicles	Construction in progress	Other	Total
March 31, 2019	\$255,963	\$654,826	\$ 993,220	\$ 235,092	\$ 44,477	\$2,183,596
Acquisitions	0	2,147	7,459	411,385	1,725	422,734
Acquisitions through business combinations	—	—	—	—	—	—
Depreciation (Note 1)	—	(55,404)	(176,752)	—	(14,211)	(246,376)
Impairment losses (Note 2)	—	—	—	—	—	—
Sales or disposals	(83)	(1,440)	(5,697)	(9)	(156)	(7,404)
Foreign currency exchange differences	(2,248)	(9,092)	(26,991)	(7,330)	(1706)	(47,376)
Other (Note 3)	807	97,073	343,734	(463,624)	19,670	(2,312)
March 31, 2020	\$254,440	\$688,119	\$1,134,963	\$ 175,505	\$ 49,798	\$2,302,844

(Notes) 1. Depreciation of property, plant and equipment is included in “Cost of sales” and “Selling, general and administrative expenses” in the consolidated statement of profit or loss.
2. Impairment losses of property, plant and equipment are included in “Cost of sales” and “Selling, general and administrative expenses” in the consolidated statement of profit or loss.
3. Transfers from construction in progress account to each line item are included in “Other.”
4. The amounts of government grants deducted to measure the carrying amounts of property, plant and equipment were ¥93 million and ¥1 million (\$9 thousand) for the fiscal years ended March 31, 2019 and 2020, respectively.

(2) Opening and closing balances of acquisition cost, accumulated depreciation (aggregated with accumulated impairment losses) and carrying amount

	Millions of yen					
	Land	Buildings and structures	Machinery, equipment and vehicles	Construction in progress	Other	Total
April 1, 2018						
Acquisition cost	¥27,830	¥ 171,814	¥ 293,572	¥11,027	¥ 14,775	¥ 519,019
Accumulated depreciation	(43)	(103,250)	(198,505)	—	(10,709)	(312,509)
Carrying amount	¥27,787	¥ 68,563	¥ 95,066	¥11,027	¥ 4,065	¥ 206,510

	Millions of yen					
	Land	Buildings and structures	Machinery, equipment and vehicles	Construction in progress	Other	Total
March 31, 2019						
Acquisition cost	¥27,943	¥ 176,607	¥ 312,051	¥25,625	¥ 16,432	¥ 558,659
Accumulated depreciation	(43)	(105,230)	(203,790)	—	(11,583)	(320,647)
Carrying amount	¥27,900	¥ 71,376	¥ 108,261	¥25,625	¥ 4,848	¥ 238,012

	Millions of yen					
	Land	Buildings and structures	Machinery, equipment and vehicles	Construction in progress	Other	Total
March 31, 2020						
Acquisition cost	¥27,777	¥ 184,766	¥ 334,502	¥19,130	¥ 17,830	¥ 584,007
Accumulated depreciation	(43)	(109,761)	(210,790)	—	(12,401)	(332,996)
Carrying amount	¥27,734	¥ 75,005	¥ 123,711	¥19,130	¥ 5,428	¥ 251,010

	Thousands of U.S. dollars					
	Land	Buildings and structures	Machinery, equipment and vehicles	Construction in progress	Other	Total
March 31, 2020						
Acquisition cost	\$254,835	\$ 1,695,101	\$ 3,068,826	\$175,505	\$ 163,578	\$ 5,357,862
Accumulated depreciation	(394)	(1,006,982)	(1,933,853)	—	(113,771)	(3,055,009)
Carrying amount	\$254,440	\$ 688,119	\$ 1,134,963	\$175,505	\$ 49,798	\$ 2,302,844

(3) Commitments

Contractual commitments to acquire property, plant and equipment are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Commitments to acquire property, plant and equipment	¥11,785	¥17,755	¥20,749	\$190,358

10. Goodwill and Intangible Assets**(1) Changes**

Changes in the carrying amounts of goodwill and intangible assets are as follows.

	Millions of yen				
	Goodwill	Intangible assets			Total
		Software	Development assets	Other (Note 2)	
April 1, 2018	¥ 307	¥ 4,551	¥1,836	¥ 4	¥ 6,699
Acquisitions	—	2,676	—	8	2,684
Additions through internal development	—	—	523	—	523
Acquisitions through business combinations	3,168	—	—	4,719	7,887
Amortization (Note 1)	—	(1,432)	(363)	(147)	(1,943)
Sales or disposals	—	(6)	—	—	(6)
Foreign currency exchange differences	(45)	(27)	—	(68)	(141)
Other	—	(42)	—	16	(26)
March 31, 2019	¥3,430	¥ 5,718	¥1,996	¥4,532	¥15,678
Acquisitions	—	2,495	—	11	2,506
Additions through internal development	—	—	424	—	424
Acquisitions through business combinations	—	—	—	—	—
Amortization (Note 1)	—	(1,791)	(359)	(599)	(2,750)
Sales or disposals	—	(8)	—	—	(8)
Foreign currency exchange differences	(60)	(72)	—	(89)	(222)
Other	—	(88)	—	234	145
March 31, 2020	¥3,369	¥ 6,253	¥2,061	¥4,089	¥15,774

	Thousands of U.S. dollars				
	Goodwill	Intangible assets			Total
		Software	Development assets	Other (Note 2)	
March 31, 2019	\$31,468	\$ 52,459	\$18,312	\$41,578	\$143,835
Acquisitions	—	22,890	—	101	22,991
Additions through internal development	—	—	3,890	—	3,890
Acquisitions through business combinations	—	—	—	—	—
Amortization (Note 1)	—	(16,431)	(3,294)	(5,495)	(25,229)
Sales or disposals	—	(73)	—	—	(73)
Foreign currency exchange differences	(550)	(661)	—	(817)	(2,037)
Other	—	(807)	—	2,147	1,330
March 31, 2020	\$30,908	\$ 57,367	\$18,908	\$37,514	\$144,716

(Notes) 1. Amortization of intangible assets is included in “Cost of sales” and “Selling, general and administrative expenses” in the consolidated statement of profit or loss.
2. “Other” includes customer-related assets, etc.

(2) Opening and closing balances of acquisition cost, accumulated amortization (aggregated with accumulated impairment losses) and carrying amount

	Millions of yen				
	Goodwill	Intangible assets			Total
		Software	Development assets	Other	
April 1, 2018					
Acquisition cost	¥307	¥10,843	¥ 2,860	¥ 1,830	¥15,842
Accumulated amortization	—	(6,292)	(1,024)	(1,826)	(9,142)
Carrying amount	¥307	¥ 4,551	¥ 1,836	¥ 4	¥ 6,699

	Millions of yen				
	Goodwill	Intangible assets			Total
		Software	Development assets	Other	
April 1, 2019					
Acquisition cost	¥3,430	¥13,336	¥ 3,212	¥ 6,588	¥ 26,567
Accumulated amortization	—	(7,617)	(1,215)	(2,055)	(10,888)
Carrying amount	¥3,430	¥ 5,718	¥ 1,996	¥ 4,532	¥ 15,678

	Millions of yen				
	Goodwill	Intangible assets			Total
		Software	Development assets	Other	
March 31, 2020					
Acquisition cost	¥3,369	¥15,312	¥ 3,637	¥ 6,704	¥ 29,023
Accumulated amortization	—	(9,058)	(1,575)	(2,615)	(13,249)
Carrying amount	¥3,369	¥ 6,253	¥ 2,061	¥ 4,089	¥ 15,774

	Thousands of U.S. dollars				
	Goodwill	Intangible assets			Total
		Software	Development assets	Other	
March 31, 2020					
Acquisition cost	\$30,908	\$140,477	\$ 33,367	\$ 61,505	\$ 266,266
Accumulated amortization	—	(83,101)	(14,450)	(23,991)	(121,550)
Carrying amount	\$30,908	\$ 57,367	\$ 18,908	\$ 37,514	\$ 144,716

(3) Research and development costs

Research and development costs for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Research and development costs	¥5,252	¥6,249	\$57,330

11. Impairment Losses of Non-financial Assets

The components of assets for which impairment losses are recognized, by asset class, are as follows.

Impairment losses are recorded in “Cost of sales” and “Selling, general and administrative expenses” in the consolidated statement of profit or loss.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Property, plant and equipment			
Machinery, equipment and vehicles	¥1,675	¥—	\$—
Total impairment losses	¥1,675	¥—	\$—

(1) Cash-generating units

The Group has its business assets grouped based on the segmentation in its management accounts. Idle assets are grouped individually.

(2) Impairment losses

For the fiscal year ended March 31, 2019, impairment losses of ¥1,675 million were recognized in the semiconductor segment due to the decline of revenue projection and other factors, which resulted in the estimated value of discounted cash flow to fall below the carrying amounts of the assets.

The recoverable amount of the assets was measured at the value in use, which was estimated using a discount rate of 8.9% being pre-tax weighted-average capital cost.

(3) Impairment tests of goodwill

The Group performs impairment tests on goodwill each fiscal year and whenever there is any indication of impairment.

Goodwill arising from business combinations is allocated on the acquisition date to the cash-generating unit or group of cash-generating units to which the future benefits from the business combination were expected to be generated.

The carrying amount of goodwill by cash-generating unit as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
NTK CERATEC CO., LTD.	¥307	¥ 307	¥ 307	\$ 2,817
CAIRE Inc.	—	3,123	3,062	28,092
Total	¥307	¥3,430	¥3,369	\$30,908

Goodwill that is of significance was a consequence of the Company's acquisition of all the shares of CAIRE Inc., CAIRE Medical Limited and CAIRE Medical Technology (Chengdu) Co., Ltd. (hereafter, CAIRE) which, together with their five subsidiaries, became subsidiaries of the Company.

In impairment tests, the recoverable amount is calculated based on the value in use. The value in use is calculated as estimated future cash flows discounted to the present value, based on the three-year business plan approved by the Board of Directors and the growth rate. The growth rate used in estimation for the period subsequent to the approved business plan is determined based on the average long-term growth rate of the markets to which the cash-generating units belong. The growth rates used to measure the value in use were 2.0% and 1.8% for the fiscal years ended March 31, 2019 and 2020, respectively. The discount rates used were 17.7% and 14.8% for the fiscal years ended March 31, 2019 and 2020, respectively. As a result of impairment tests, no impairment losses have been recognized with respect to the said goodwill.

Even if the major assumptions used in the impairment tests were to change within a reasonable range, the Group deems the possibility to be low that the cash-generating unit would incur significant impairment losses.

12. Leases

Lessee

The Group deems that an arrangement is or contains a lease if it conveys the right to control the use of a specific asset for a period of time in exchange for consideration, and recognizes a right-of-use asset and a lease liability at the commencement date of the lease. Principal lease transactions are in leases of office buildings, warehouse, vehicles and metal dies.

Lease transactions mentioned above contain contracts with an option for the lessee to extend or terminate the lease in order to notably secure flexibility for the Group's business offices.

The option to extend the lease will be exercised if it is deemed necessary to do so by taking into consideration all relevant facts and circumstances which include the need for the underlying asset in the execution of business, the degree of difficulty in acquiring an alternative asset, and conditions for exercising the option. The Group considers that it cannot be reasonably certain to exercise the option given the extreme difficulty to conclude, at the commencement of a lease, whether or not the option would be exercised in the future. Consequently, the period covered by the option is not included in the lease period, and lease payment for the said period is not included in measuring lease liability. The period covered by an extension option and lease payment associated with the period covered by the option are normally the same or similar to the initial contract period and lease payment.

The option to terminate the lease allows early termination primarily when a party so notifies the other party a certain period in advance of the end date of the lease.

The Group reassesses as necessary whether it can be reasonably certain to exercise an extension option or not to exercise a termination option. The financial impact of such reassessment for the fiscal year ended March 31, 2020 was insignificant.

Contracts entered into by the Group that include variable lease payments or residual value guarantees and leases committed but not yet commenced do not have materiality.

The components of right-of-use assets are as follows.

	Millions of yen					
	Category of underlying assets					
	Buildings and structures	Machinery, equipment and vehicles	Tools, furniture and fixtures	Land	Software	Total
April 1, 2018	¥5,565	¥1,479	¥154	¥356	¥31	¥7,587
March 31, 2019	¥6,741	¥1,452	¥200	¥177	¥20	¥8,591
March 31, 2020	¥7,180	¥1,970	¥145	¥240	¥ 4	¥9,541

	Thousands of U.S. dollars					
	Category of underlying assets					
	Buildings and structures	Machinery, equipment and vehicles	Tools, furniture and fixtures	Land	Software	Total
March 31, 2020	\$65,872	\$18,073	\$1,330	\$2,202	\$37	\$87,532

Changes in the amounts of right-of-use assets, lease-related expenses and cash outflows for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Depreciation of right-of-use assets			
With buildings and structures as underlying assets	¥ 987	¥1,270	\$11,651
With machinery, equipment and vehicles as underlying assets	522	625	5,734
With tools, furniture and fixtures as underlying assets	126	138	1,266
With land as underlying asset	175	186	1,706
With software as underlying asset	10	16	147
Total depreciation of right-of-use assets	¥1,822	¥2,237	\$20,523
Interest on lease liabilities	¥ 96	¥ 82	\$ 752
Short-term lease expenses	¥ 755	¥ 761	\$ 6,982
Expenses associated with leases for which the underlying assets are of low value	¥ 11	¥ 24	\$ 220
Variable lease payments not included in the measurement of lease liabilities	—	—	—
Income from subleases	—	—	—
Gains or losses arising from sale and leaseback transactions	—	—	—
Cash outflow related to lease	¥2,997	¥3,423	\$31,404
Changes in the carrying amount of right-of-use assets	¥2,859	¥3,650	\$33,486

Maturity analysis of lease liabilities is presented in "Note 20: Financial Instruments".

13. Investments Accounted for Using the Equity Method

Investments accounted for using the equity method are all related to associates and individually immaterial.

14. Other Financial Assets

The components of other financial assets as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Items classified as financial assets measured at amortized cost				
Bonds, etc.	¥19,206	¥ —	¥ —	\$ —
Time deposits	9,567	9,088	5,462	50,110
Other	440	607	1,078	9,890
Items classified as financial assets measured at fair value through profit or loss				
Bonds, etc.	¥ —	¥ 554	¥ 54	\$ 495
Derivative assets	693	—	50	459
Items classified as financial assets measured at fair value through other comprehensive income				
Stocks	¥60,096	¥51,720	¥42,809	\$392,743
Total	¥90,004	¥61,970	¥49,454	\$453,706
Of which, current assets	¥29,533	¥ 9,423	¥ 5,897	\$ 54,101
Of which, noncurrent assets	¥60,470	¥52,547	¥43,557	\$399,606

15. Trade and Other Payables

The components of trade and other payables as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Accounts payable	¥32,495	¥34,839	¥31,892	\$292,587
Other payables	12,223	14,210	11,788	108,147
Total	¥44,719	¥49,049	¥43,681	\$400,743

(Note) Trade and other payables are classified as financial liabilities measured at amortized cost.

16. Bonds and Borrowings

The components of bonds and borrowings as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars	Term of payment
	Date of transition (April 1, 2018)	2019	2020	2020	
Short-term loans payable with interest rate of 2.80%	¥10,113	¥ 27,587	¥ 10,931	\$ 100,284	—
Current portion of long-term loans payable with interest rate of 0.18%	9,693	8,879	4,353	39,936	—
Current portion of bonds (Note 3)	24,987	—	29,971	274,963	—
Long-term loans payable (except portion due within one year) with interest rate of 0.11%	20,211	22,351	47,633	437,000	from 2021 to 2026
Bonds (Note 3)	29,915	49,842	49,722	456,165	—
Total	¥94,920	¥108,661	¥142,663	\$1,308,835	—
Of which, current liabilities	¥44,793	¥ 36,466	¥ 45,257	\$ 415,202	—
Of which, noncurrent liabilities	¥50,126	¥ 72,194	¥ 97,406	\$ 893,633	—

(Notes) 1. Bonds and borrowings are classified as financial liabilities measured at amortized cost.

2. Interest rates shown are weighted-average interest rates for the outstanding balance as at March 31, 2020.

3. The issuing terms of the bonds are as follows.

Name of bond	Date of issuance	Millions of yen			Thousands of U.S. dollars
		Date of transition (April 1, 2018)	2019	2020	2020
0.391% unsecured bonds due September 11, 2018	September 11, 2013	¥25,000	¥ —	¥ —	\$ —
0.296% unsecured bonds due October 27, 2020	October 27, 2015	30,000	30,000	30,000	275,229
0.110% unsecured bonds due June 14, 2023	June 14, 2018	—	10,000	10,000	91,743
0.370% unsecured bonds due June 14, 2028	June 14, 2018	—	10,000	10,000	91,743
0.110% unsecured bonds due June 20, 2024	June 20, 2019	—	—	20,000	183,486
0.270% unsecured bonds due June 20, 2029	June 20, 2019	—	—	10,000	91,743
Total	—	¥55,000	¥50,000	¥80,000	\$733,945

17. Other Financial Liabilities

The components of other financial liabilities as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Items classified as financial liabilities measured at amortized cost				
Other	¥ 143	¥ 96	¥ 5	\$ 46
Lease liabilities	8,993	9,678	10,283	94,339
Items classified as financial liabilities measured at fair value through profit or loss				
Derivative liabilities	3,286	1,670	876	8,037
Total	¥12,423	¥11,445	¥11,165	\$102,431
Of which, current liabilities	¥ 2,096	¥ 2,281	¥ 3,126	\$ 28,679
Of which, noncurrent liabilities	¥10,326	¥ 9,164	¥ 8,038	\$ 73,743

18. Other Liabilities

The components of other liabilities as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Accrued expenses	¥13,684	¥10,951	¥10,552	\$ 96,807
Accrued bonuses	9,589	9,538	8,664	79,486
Accrued paid leave	7,488	8,008	8,134	74,624
Other	6,117	8,059	7,016	64,367
Total	¥36,880	¥36,557	¥34,367	\$315,294
Of which, current liabilities	¥34,069	¥33,332	¥31,176	\$286,018
Of which, noncurrent liabilities	¥ 2,811	¥ 3,225	¥ 3,191	\$ 29,275

19. Employee Benefits

The Company and certain consolidated subsidiaries have a defined benefit plan and a lump-sum retirement benefit plan, while certain overseas consolidated subsidiaries have a defined contribution plan. Retirement benefits trust is established on the Company's defined benefit plan. In the defined benefit plan, the amount of benefits is calculated based on the accumulated number of points earned by employees each year during their period of service, the number of their service years and other conditions.

The Company and certain consolidated subsidiaries have instituted a contract-type pension plan based on pension provision. The Company and certain consolidated subsidiaries have established corporate pension provisions which, by agreement with their employees, stipulate the contents of the pension plan such as eligibility requirements, contents and method of payments, and burden of contributions. The pension provisions have obtained the approval of the Minister of Health, Labour and Welfare. Administration of the pension plans, including payment of contributions and management of accumulated funds, is undertaken by insurance companies, trust banks and other institutions with which contracts have been signed. In addition to the administration and management of pension assets, these companies also perform actuarial calculation and payments of annual and lump-sum benefits.

The Company and certain consolidated subsidiaries are required to comply with the dispositions and provisions issued by the Minister of Health, Labour and Welfare pursuant to laws and regulations, and to faithfully perform their duties for the benefit of plan participants, etc. They are prohibited from entering into any contract for administration and management of the assets for the purpose of pursuing their own interests or the interests of third parties other than the participants, and from giving instructions for specific methods concerning management of the pension reserves.

(1) Defined benefit plan

1) Reconciliation of defined benefit obligations and plan assets

The relationships between defined benefit obligations and plan assets, and net defined benefit liabilities and assets recorded in the consolidated statements of financial position are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Present value of funded retirement benefit obligations	¥48,212	¥50,181	¥49,870	\$457,523
Fair value of plan assets	42,305	42,923	41,904	384,440
Subtotal	¥ 5,906	¥ 7,258	¥ 7,965	\$ 73,073
Present value of unfunded retirement benefit obligations	19,136	19,941	21,528	197,505
Net defined benefit liabilities or assets	¥25,043	¥27,199	¥29,494	\$270,587

Amounts recognized in the consolidated statement of financial position

Retirement benefit liability	25,043	27,199	29,494	270,587
Net amount	¥25,043	¥27,199	¥29,494	\$270,587

2) Reconciliation of fair value of defined benefit obligations

Changes in the present value of defined benefit obligations for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Opening balance of present value of defined benefit obligations (Note 1)	¥67,349	¥70,122	\$643,321
Current service cost	3,443	3,572	32,771
Interest expenses	593	544	4,991
Remeasurement	1,368	276	2,532
Actuarial gains and losses arising from changes in demographic assumptions	(41)	118	1,083
Actuarial gains and losses arising from changes in financial assumptions	1,023	290	2,661
Actuarial differences arising from revisions to results	386	(133)	(1,220)
Past service cost	7	36	330
Benefits paid	(2,799)	(3,065)	(28,119)
Other (Note 2)	160	(87)	(798)
Closing balance of present value of defined benefit obligations (Note 1)	¥70,122	¥71,398	\$655,028

(Notes) 1 The weighted-average durations of defined benefit plans at the date of transition, in the fiscal year ended March 31, 2019 and in the fiscal year ended March 31, 2020 were 15.5 years, 15.2 years and 14.5 years, respectively.
2 "Other" includes translation differences of defined benefit obligations of overseas consolidated subsidiaries.

3) Reconciliation of the fair value of plan assets

Changes in the fair value of plan assets for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Opening balance of fair value of plan assets	¥42,305	¥42,923	\$393,789
Interest income	373	325	2,982
Remeasurement	244	(535)	(4,908)
Return on plan assets (excluding interest income)	244	(535)	(4,908)
Contributions from the employer	1,823	1,129	10,358
Benefits paid	(1,937)	(1,915)	(17,569)
Other (Note)	113	(23)	(211)
Closing balance of fair value of plan assets	¥42,923	¥41,904	\$384,440

(Note) "Other" includes translation differences of defined benefit assets of overseas consolidated subsidiaries.

The Group plans to contribute ¥2,664 million (\$24,440 thousands) in the fiscal year ending March 31, 2021.

4) Components of plan assets by category

The fair value of plan assets by category as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen									Thousands of U.S. dollars		
	Date of transition (April 1, 2018)			2019			2020			FY 2019 (March 31, 2020)		
	Quoted market prices in active markets		Total	Quoted market prices in active markets		Total	Quoted market prices in active markets		Total	Quoted market prices in active markets		Total
	Yes	No		Yes	No		Yes	No		Yes	No	
Shares	¥ 7,466	¥ —	¥ 7,466	¥ 5,286	¥ —	¥ 5,286	¥ 5,796	¥ —	¥ 5,796	\$ 53,174	\$ —	\$ 53,174
Bonds	16,504	—	16,504	16,461	—	16,461	15,654	—	15,654	143,615	—	143,615
General account	—	11,182	11,182	—	11,333	11,333	—	11,614	11,614	—	106,550	106,550
Alternatives (Note)	—	2,198	2,198	—	2,776	2,776	—	3,397	3,397	—	31,165	31,165
Other	3,020	1,934	4,954	3,592	3,473	7,066	3,683	1,758	5,441	33,789	16,128	49,917
Total	¥26,990	¥15,315	¥42,305	¥25,340	¥17,582	¥42,923	¥25,134	¥16,770	¥41,904	\$230,587	\$153,853	\$384,440

(Note) Alternatives represent primarily investments in private debt and infrastructure funds.

Management of plan assets aims to secure total return in the long term within the acceptable range of risks, which is necessary to ensure stable payments of pension benefits, lump-sum benefits and other payments in the future.

To this end, the Group seeks to maintain a portfolio of assets that represents optimal asset allocation in the years ahead with due consideration to expected rate of return of investment assets, risks and other factors.

5) Significant actuarial assumption

Significant actuarial assumption used in the calculation is as follows.

	Percentage		
	Date of transition (April 1, 2018)	FY 2018 (March 31, 2019)	FY 2019 (March 31, 2020)
Discount rate	0.7	0.6	0.6

In addition to the above, actuarial assumptions include future salary increases, the mortality rate and the expected retirement rate.

6) Sensitivity analysis

The table below shows the effect of a 0.5% change in the discount rate used in actuarial calculations on the present value of defined benefit obligations. This analysis assumes that all other assumptions remain constant. In actuality, however, the sensitivity analysis may be affected by changes in other assumptions.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
0.5% increase in the discount rate	¥(4,469)	¥(4,726)	¥(5,127)	\$(47,037)
0.5% decrease in the discount rate	¥ 4,968	¥ 5,213	¥ 5,643	\$ 51,771

(2) Defined contribution plan

The amount recognized as an expense in relation to the defined contribution plan was ¥366 million and ¥631 million (\$5,789 thousand) for the fiscal years ended March 31, 2019 and 2020, respectively.

(3) Employee benefit cost

In the consolidated statement of profit or loss, the total of employee benefit cost included in “Cost of sales” and “Selling, general and administrative expenses” was ¥112,739 million and ¥111,078 million (\$1,019,064 thousand) for the fiscal years ended March 31, 2019 and 2020, respectively.

20. Financial Instruments

(1) Capital risk management policy

The Group’s capital management aims to achieve sustainable growth and maximization of corporate value while maintaining a balance between financial soundness and capital efficiency.

To achieve financial soundness, the Group strives to maintain solid financial strength and high credit rating to ensure low-cost financing.

To achieve capital efficiency, the Group strives to make effective use of financing while maintaining a balance with financial soundness, and thereby reduce overall cost of capital.

The Group is not subject to any significant capital restrictions.

(2) Financial Risk Management

The Group is exposed to financial risks in the course of conducting its business activities and performs risk management to mitigate such risks.

Financial risks mainly include currency fluctuation risk, interest rate fluctuation risk, market price fluctuation risk, credit risk and liquidity risk.

1) Currency fluctuation risk

As the Group is engaged in operations globally, it is exposed to risks from currency fluctuations arising from transactions denominated in currencies other than its functional currency. In order to avoid such currency risks, the Group uses forward exchange contracts and interest

currency options for trade receivables denominated in foreign currencies, and interest rate and currency swap arrangements as derivative transactions for borrowings denominated in foreign currencies, in conformity with internal control regulations within the scope of actual demand.

Currency sensitivity analysis

The following table represents the Group’s sensitivity analysis and shows the impact that a 1% change in the rate of Japanese yen against the relevant currencies would have on profit or loss and equity. The analysis does not include the impact of translation, from functional currency into yen, of financial instruments as well as assets and liabilities, revenue and expenses of foreign operations. Furthermore, it assumes that other variable factors (balances, interest rates, etc.) are constant.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
U.S. dollar	¥203	¥113	\$1,037
Euro	¥ 39	¥ 46	\$ 422
Chinese yuan	¥ 76	¥102	\$ 936
Thai baht	¥ 98	¥171	\$1,569

2) Interest rate fluctuation risk

The Group is exposed to interest rate fluctuation risk as it has foreign currency-denominated borrowings with floating interest rates. In order to avoid interest rate fluctuation risks, the Group uses interest rate and currency swap arrangements as derivative transactions in conformity with its internal control regulations within the scope of actual demand.

Through these measures, the Group deems its exposure to interest rate fluctuation risk to be limited and the impact of interest rate fluctuations to be insignificant.

3) Market price fluctuation risk

The Group is exposed to the risk of fluctuations in the stock prices of equity instruments (stocks). Equity instruments that the Group holds are for the purpose of maintaining and strengthening continuous and stable relationships with its customers and other counterparties. No equity instruments are held for trading purposes. The Group regularly checks the fair value of the stocks and the financial status of the issuing companies.

Price sensitivity analysis

The following table represents the Group’s sensitivity analysis showing the impact on equity that would result from a 1% change in the market prices of equity instruments that the Group holds as of the end of the fiscal year. The analysis assumes that other variable factors are constant.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Equity	¥328	¥264	\$2,422

4) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty (which includes financial institutions, etc.) fails to meet its contractual obligations due to deterioration in credit risk, bankruptcy or other causes. The Group manages its credit risk by setting credit limits on its counterparties in accordance with its credit management rules, etc.

For trade receivables, the Group only deals with financial institutions, etc. with high credit rating in order to reduce counterparty risks. Therefore, the Group believes that the effect of a credit risk is limited.

The Group has neither significant credit risk exposure to any particular customer, nor excessive concentration of credit risk that requires special management.

The carrying amount, after impairment losses, of financial assets presented in the consolidated financial statements represents the maximum exposure of the Group’s credit risk, without considering the appraised value of the related collateral.

(i) Credit risk management practices

The Group determines whether credit risk has increased significantly with reference to such information as internal and external ratings. Objective evidence showing significant increase in credit risk includes default or delinquency, and indications of borrower insolvency.

The Group assesses a financial asset to be in default if the borrower has, or is highly probable to have, significant financial difficulty and its credit to be impaired when bankruptcy or other reorganization proceedings have commenced with respect to the borrower.

For trade receivables, allowance for doubtful accounts is always measured at an amount equal to the lifetime expected credit losses. Expected credit losses are measured by multiplying the amount of receivables by the provision rate that is based on historical credit loss rate. For receivables other than trade receivables, etc., allowance for doubtful accounts is in principle recorded at an amount equal to the 12-month expected credit losses. However, if the credit risk has increased significantly since the initial recognition, allowance for doubtful accounts is recorded at an amount equal to the lifetime expected credit losses. If it is assessed that the credit risk has not increased significantly, the expected credit loss for such receivables is calculated by multiplying the amount of receivables by the provision rate that is based on historical credit loss rate. With respect to assets whose credit risk has been assessed to have increased significantly, and receivables, etc. that are treated as credit-impaired financial assets, the expected credit losses are measured by taking into account such factors as the debtor’s financial condition, estimated realizable collateral value, compensation by guarantee deposits and repayment schedule.

When there are no reasonable expectations that a financial asset will be recoverable in its entirety or a portion thereof, the carrying amount of the financial asset is directly written off.

- (ii) Changes in allowance for doubtful accounts and underlying assets
Changes in allowance for doubtful accounts are as follows.

Allowance for doubtful accounts

	Millions of yen				
	Measured at 12-month expected credit losses	Measured at lifetime expected credit losses			Total
		Financial assets that are not credit impaired	Credit-impaired financial assets	Trade receivables	
Balance as at April 1, 2018	¥—	¥119	¥—	¥ 424	¥ 543
Increase during the fiscal year	—	—	—	38	38
Decrease during the fiscal year	—	—	—	(86)	(86)
Other	—	—	—	120	120
Balance as of March 31, 2019	¥—	¥119	¥—	¥ 496	¥ 616
Increase during the fiscal year	—	—	—	98	98
Decrease during the fiscal year	—	—	—	(140)	(140)
Other	—	—	—	(28)	(28)
Balance as at March 31, 2020	¥—	¥119	¥—	¥ 425	¥ 545

	Thousands of U.S. dollars				
	Measured at 12-month expected credit losses	Measured at lifetime expected credit losses			Total
		Financial assets that are not credit impaired	Credit-impaired financial assets	Trade receivables	
Balance as of March 31, 2019	\$—	\$1,092	\$—	\$ 4,550	\$ 5,651
Increase during the fiscal year	—	—	—	899	899
Decrease during the fiscal year	—	—	—	(1,284)	(1,284)
Other	—	—	—	(257)	(257)
Balance as at March 31, 2020	\$—	\$1,092	\$—	\$ 3,899	\$ 5,000

The aggregate carrying amounts of financial assets held are as follows.

Carrying amounts

	Millions of yen				
	Measured at 12-month expected credit losses	Measured at lifetime expected credit losses			Total
		Financial assets that are not credit impaired	Credit-impaired financial assets	Trade receivables	
Date of transition (April 1, 2018)	¥33,299	¥132	¥—	¥93,063	¥126,494
FY 2018 (March 31, 2019)	¥14,189	¥132	¥—	¥96,301	¥110,623
FY 2019 (March 31, 2020)	¥11,193	¥132	¥—	¥88,365	¥ 99,691

	Thousands of U.S. dollars				
	Measured at 12-month expected credit losses	Measured at lifetime expected credit losses			Total
		Financial assets that are not credit impaired	Credit-impaired financial assets	Trade receivables	
FY 2019 (March 31, 2020)	\$102,688	\$1,211	\$—	\$810,688	\$914,596

- (iii) Risk profile

The components of credit risk profile based on due date as of the date of transition, March 31, 2019 and 2020 are as follows.

Trade receivables

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	
Lifetime expected credit losses				
Not past due		¥90,045	¥90,709	¥78,587
Up to 30 days past due		1,746	3,421	5,912
Over 30 days past due		232	809	2,277
Over 60 days past due		178	422	4,477
Over 90 days past due		859	940	1,098
Total		¥93,063	¥96,301	¥88,365

Other payables and other financial assets

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	
Measured at an amount equal to 12-month expected credit losses				
Not past due	¥4,511	¥5,069	¥5,718	\$52,459
Past due	13	31	12	110
Total	¥4,525	¥5,100	¥5,730	\$52,569

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	
Lifetime expected credit losses (financial assets that are not credit impaired)				
Not past due	¥132	¥132	¥132	\$1,211
Past due	—	—	—	—
Total	¥132	¥132	¥132	\$1,211

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	
Lifetime expected credit losses (credit-impaired financial assets)				
Not past due	¥—	¥—	¥—	\$—
Past due	—	—	—	—
Total	¥—	¥—	¥—	\$—

(Note) Of financial assets that are measured at amortized cost and debt instrument assets that are measured at fair value through other comprehensive income, financial instruments with clearly low credit risk, such as time deposits that are held with major financial institutions, are not included in the above chart as no expected credit losses are recorded.

- 5) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in meeting its repayment obligations and not be able to pay on the payment due date of its financial liabilities.

Trade and other payables, borrowings and other financial liabilities are exposed to liquidity risk. The Group manages these risks through measures that include development and revisions of finance plans as appropriate, and establishment of committed lines of credit with financial institutions.

Maturity analysis

The balance of major financial liabilities (including derivatives) by contractual maturities are as follows.

Date of transition (April 1, 2018)	Millions of yen							
	Carrying amount	Contractual cash flows	Not later than 1 year	Later than 1 year, not later than 2 years	Later than 2 years, not later than 3 years	Later than 3 years, not later than 4 years	Later than 4 years, not later than 5 years	Later than 5 years
Non-derivative financial liabilities								
Trade and other payables	¥ 44,719	¥ 44,719	¥44,719	¥ —	¥ —	¥ —	¥ —	¥ —
Borrowings	¥ 40,017	¥ 40,139	¥19,858	¥ 8,530	¥ 4,265	¥7,486	¥ —	¥ —
Bonds	¥ 54,902	¥ 55,315	¥25,137	¥ 88	¥30,088	—	¥ —	¥ —
Lease liabilities	¥ 8,993	¥ 9,979	¥ 2,195	¥ 2,016	¥ 1,802	¥1,221	¥909	¥1,833
Derivative financial liabilities								
Forward exchange contracts, currency options	¥ —	¥ —	¥ —	¥ —	¥ —	¥ —	¥ —	¥ —
Interest rate and currency swaps	¥ 3,286	¥ 3,286	¥ —	¥ —	¥ 2,906	¥ 379	¥ —	¥ —
Total	¥151,919	¥153,440	¥91,911	¥10,635	¥39,063	¥9,086	¥909	¥1,833

March 31, 2019	Millions of yen							
	Carrying amount	Contractual cash flows	Not later than 1 year	Later than 1 year, not later than 2 years	Later than 2 years, not later than 3 years	Later than 3 years, not later than 4 years	Later than 4 years, not later than 5 years	Later than 5 years
Non-derivative financial liabilities								
Trade and other payables	¥ 49,049	¥ 49,049	¥49,049	¥ —	¥ —	¥ —	¥ —	¥ —
Borrowings	¥ 58,818	¥ 58,886	¥36,497	¥ 4,454	¥7,822	¥ 3	¥ 103	¥10,006
Bonds	¥ 49,842	¥ 50,578	¥ 136	¥30,136	¥ 48	¥ 48	¥10,042	¥10,166
Lease liabilities	¥ 9,678	¥ 10,244	¥ 2,394	¥ 2,229	¥1,522	¥1,135	¥ 658	¥2,303
Derivative financial liabilities								
Forward exchange contracts, currency options	¥ 55	¥ 55	¥ 55	¥ —	¥ —	¥ —	¥ —	¥ —
Interest rate and currency swaps	¥ 1,614	¥ 1,614	¥ —	¥ 1,559	¥ 54	¥ —	¥ —	¥ —
Total	¥169,059	¥170,429	¥88,134	¥38,380	¥9,447	¥1,187	¥10,804	¥22,475

March 31, 2020	Millions of yen							
	Carrying amount	Contractual cash flows	Not later than 1 year	Later than 1 year, not later than 2 years	Later than 2 years, not later than 3 years	Later than 3 years, not later than 4 years	Later than 4 years, not later than 5 years	Later than 5 years
Non-derivative financial liabilities								
Trade and other payables	¥ 43,681	¥ 43,681	¥43,681	¥ —	¥ —	¥ —	¥ —	¥ —
Borrowings	¥ 62,919	¥ 63,443	¥15,351	¥7,725	¥ 59	¥ 159	¥ 59	¥40,088
Bonds	¥ 79,743	¥ 80,897	¥30,185	¥ 97	¥ 97	¥10,091	¥20,075	¥20,251
Lease liabilities	¥ 10,283	¥ 10,786	¥ 2,624	¥1,865	¥1,500	¥ 1,095	¥ 696	¥ 3,004
Derivative financial liabilities								
Interest rate and currency swaps	¥ 876	¥ 876	¥ 602	¥ 273	¥ —	¥ —	¥ —	¥ —
Total	¥197,504	¥199,585	¥92,445	¥9,962	¥1,656	¥11,346	¥20,831	¥63,343

March 31, 2020	Thousands of U.S. dollars							
	Carrying amount	Contractual cash flows	Not later than 1 year	Later than 1 year, not later than 2 years	Later than 2 years, not later than 3 years	Later than 3 years, not later than 4 years	Later than 4 years, not later than 5 years	Later than 5 years
Non-derivative financial liabilities								
Trade and other payables	\$ 400,743	\$ 400,743	\$400,743	\$ —	\$ —	\$ —	\$ —	\$ —
Borrowings	\$ 577,239	\$ 582,046	\$140,835	\$70,872	\$ 541	\$ 1,459	\$ 541	\$367,780
Bonds	\$ 731,587	\$ 741,257	\$276,927	\$ 890	\$ 890	\$ 92,578	\$184,174	\$185,789
Lease liabilities	\$ 94,339	\$ 98,954	\$ 24,073	\$17,110	\$13,761	\$ 10,046	\$ 6,385	\$ 27,560
Derivative financial liabilities								
Interest rate and currency swaps	\$ 8,037	\$ 8,037	\$ 5,523	\$ 2,505	\$ —	\$ —	\$ —	\$ —
Total	\$1,811,963	\$1,831,055	\$848,119	\$91,394	\$15,193	\$104,092	\$191,110	\$581,128

(3) Fair value

(i) Fair value measurement methodology

The fair values of financial instruments are measured in the following manner.

(Cash and cash equivalents, trade and other receivables, other financial assets, trade and other payables, other financial liabilities)

For instruments that are settled in the short term, the carrying amount is a reasonable approximation of fair value. For other instruments, the present value of future cash flows, discounted by an interest rate that takes into account remaining maturity and credit risk, is mainly used to measure the fair value. The above are classified as Level 2 of the fair value measurement.

(Other financial assets, other financial liabilities)

The fair values of listed stocks are based on their market prices at the end of the fiscal year. These are classified as Level 1. The fair values of bonds and similar instruments are measured by referencing quotes obtained from financial institutions with which the Group has a relationship, using reasonable valuation methods based on available information. These are classified as Level 2 or 3. The fair values of unlisted stocks, etc. are measured primarily by the net asset value method. These are classified as Level 3. Measurement of the fair value for financial instruments classified as Level 3 is performed in accordance with relevant internal regulations. In the measurement of the fair value, the Group uses the valuation method and inputs that most appropriately reflect the nature, characteristics and risks of the financial instrument being measured. Results of the fair value measurement are reviewed by the senior management.

For financial instruments classified as Level 3, no significant change in the fair value will result even if unobservable inputs were changed to reasonably possible alternative assumptions.

The fair values of derivative and similar transactions are measured based on observable market inputs such as interest rates and foreign exchange rates obtained from financial institutions with which the Group has relationship, etc. These are classified as Level 2 as their fair values are measured using observable market data.

(Bonds and borrowings)

The fair values of bonds are measured by the quotes obtained from financial institutions with which the Group has a relationship.

The fair values of short-term borrowings are based on their carrying amounts as the fair values are considered to approximate their carrying amounts.

The fair values of long-term borrowings are measured by the sum of the principal and interest discounted by an interest rate applicable to new borrowings under the same conditions. Both bonds and borrowings use observable market inputs to measure their fair values. These are all classified as Level 2.

(ii) Fair value hierarchy

The fair value hierarchy in the measurement of financial instruments categorizes the inputs as follows.

Level 1: Fair value measured by quoted prices in active markets

Level 2: Fair value measured by inputs other than quoted prices included in Level 1 that are observable, either directly or indirectly

Level 3: Fair value measured using valuation techniques that include unobservable input

Major financial instruments measured at amortized cost

Date of transition (April 1, 2018)	Millions of yen				
	Carrying amount	Fair value			Total
Liabilities		Level 1	Level 2	Level 3	
Bonds	¥54,902	¥—	¥55,143	¥—	¥55,143
Borrowings	29,904	—	29,978	—	29,978
Total	¥84,807	¥—	¥85,122	¥—	¥85,122

March 31, 2019	Millions of yen				
	Carrying amount	Fair value			Total
Liabilities		Level 1	Level 2	Level 3	
Bonds	¥49,842	¥—	¥50,196	¥—	¥50,196
Borrowings	31,230	—	31,290	—	31,290
Total	¥81,073	¥—	¥81,486	¥—	¥81,486

March 31, 2020	Millions of yen				
	Carrying amount	Fair value			Total
Liabilities		Level 1	Level 2	Level 3	
Bonds	¥ 79,743	¥—	¥ 79,804	¥—	¥ 79,804
Borrowings	51,987	—	51,992	—	51,992
Total	¥131,731	¥—	¥131,796	¥—	¥131,796

March 31, 2020	Thousands of U.S. dollars				
	Carrying amount	Fair value			Total
Liabilities		Level 1	Level 2	Level 3	
Bonds	\$731,587	\$—	\$732,147	\$—	\$732,147
Borrowings	476,945	—	476,991	—	476,991
Total	\$1,208,541	\$—	\$1,209,138	\$—	\$1,209,138

(Notes) 1. Bonds and borrowings include balance of instruments to be redeemed or repaid within one year.

2. Short-term financial assets and financial liabilities are not included in the above table as their carrying amounts approximate their fair values.

Financial instruments that are measured at fair value on a recurring basis

Date of transition (April 1, 2018)	Millions of yen				
	Carrying amount	Fair value			
		Level 1	Level 2	Level 3	Total
Assets					
Financial assets measured at fair value through other comprehensive income:					
Stocks	¥60,096	¥56,961	¥ —	¥3,135	¥60,096
Financial assets measured at fair value through profit or loss:					
Derivative assets	693	—	693	—	693
Total	¥60,790	¥56,961	¥ 693	¥3,135	¥60,790
Liabilities					
Financial liabilities measured at fair value through profit or loss:					
Derivative liabilities	¥ 3,286	¥ —	¥3,286	¥ —	¥ 3,286
Total	¥ 3,286	¥ —	¥3,286	¥ —	¥ 3,286

Date of transition (April 1, 2019)	Millions of yen				
	Carrying amount	Fair value			
		Level 1	Level 2	Level 3	Total
Assets					
Financial assets measured at fair value through other comprehensive income:					
Stocks	¥51,720	¥47,291	¥ —	¥4,428	¥51,720
Financial assets measured at fair value through profit or loss:					
Bonds, etc.	554	—	—	554	554
Derivative assets	—	—	—	—	—
Total	¥52,275	¥47,291	¥ —	¥4,983	¥52,275
Liabilities					
Financial liabilities measured at fair value through profit or loss:					
Derivative liabilities	¥ 1,670	¥ —	¥1,670	¥ —	¥ 1,670
Total	¥ 1,670	¥ —	¥1,670	¥ —	¥ 1,670

Date of transition (April 1, 2020)	Millions of yen				
	Carrying amount	Fair value			
		Level 1	Level 2	Level 3	Total
Assets					
Financial assets measured at fair value through other comprehensive income:					
Stocks	¥42,809	¥38,147	¥ —	¥4,661	¥42,809
Financial assets measured at fair value through profit or loss:					
Bonds, etc.	54	—	—	54	54
Derivative assets	50	—	50	—	50
Total	¥42,913	¥38,147	¥ 50	¥4,715	¥42,913
Liabilities					
Financial liabilities measured at fair value through profit or loss:					
Derivative liabilities	¥ 876	¥ —	¥876	¥ —	¥ 876
Total	¥ 876	¥ —	¥876	¥ —	¥ 876

Date of transition (April 1, 2020)	Thousands of U.S. dollars				
	Carrying amount	Fair value			
		Level 1	Level 2	Level 3	Total
Assets					
Financial assets measured at fair value through other comprehensive income:					
Stocks	\$392,743	\$349,972	\$ —	\$42,761	\$392,743
Financial assets measured at fair value through profit or loss:					
Bonds, etc.	495	—	—	495	495
Derivative assets	459	—	459	—	459
Total	\$393,697	\$349,972	\$ 459	\$43,257	\$393,697
Liabilities					
Financial liabilities measured at fair value through profit or loss:					
Derivative liabilities	\$ 8,037	\$ —	\$8,037	\$ —	\$ 8,037
Total	\$ 8,037	\$ —	\$8,037	\$ —	\$ 8,037

Reconciliation from the opening balances to the closing balances of financial instruments classified as Level 3 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Opening balance	¥3,135	¥ 4,983	\$ 45,716
Total gains (losses)	180	(1,937)	(17,771)
Profit (loss) (Note 1)	11	(11)	(101)
Other comprehensive income (Note 2)	168	(1,926)	(17,670)
Acquisitions	1,698	1,665	15,275
Disposals	(2)	—	—
Other	(28)	4	37
Closing balance	¥4,983	¥ 4,715	\$ 43,257

(Notes) 1. Gains and losses included in profit or loss relate to financial assets measured at fair value through profit or loss as of the end of the fiscal year. These gains and losses are presented in “Finance income” and “Finance expenses” in the consolidated statement of profit or loss.
2. Gains and losses included in other comprehensive income relate to financial assets measured at fair value through other comprehensive income as of the end of the fiscal year. These gains and losses are presented in “Financial assets measured at fair value through other comprehensive income” in the consolidated statement of comprehensive income.

(4) Equity instruments

For investments in equity instruments that are made with the objective of maintaining and strengthening business relationships, the Group classifies such equity instruments as financial assets measured at fair value through other comprehensive income, in view of the objective of holding these instruments.

Of these financial assets, the names and fair values of the major stocks that are traded in an active market are as follows.

Stock name	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Toyota Motor Corporation	¥11,820	¥11,235	¥11,259	\$103,294
TOTO Ltd.	14,291	11,960	9,158	84,018
Honda Motor Co., Ltd.	11,292	9,240	7,518	68,972
Mitsubishi UFJ Financial Group, Inc.	7,204	5,068	3,714	34,073
NGK INSULATORS, LTD.	1,774	1,556	1,371	12,578
Yamaha Motor Co., Ltd.	1,993	1,361	819	7,514
Noritake Co., Ltd.	968	1,113	722	6,624
Nissan Motor Co., Ltd.	1,744	1,435	563	5,165
Suzuki Motor Corporation	1,022	874	461	4,229
Rinnai Corporation	574	451	447	4,101

(Note) Financial assets that do not have an active market are primarily investments in new businesses such as environment/energy, medical, and next-generation automobiles. The fair value of investments in new businesses as of the date of transition, March 31, 2019 and March 31, 2020 were ¥1,965 million, ¥3,082 million and ¥3,078 million (\$28,239 thousand), respectively.

Equity instruments are sold as appropriate, paying attention to market trends, if the Group judges it is no longer appropriate to continue holding the instrument upon assessment of the effects from the point of view of the rationality of holding the stocks and enhancement of corporate value, based on a comparison of capital cost with medium-term to long-term risk and return, and other factors. The fair value of stocks sold during the fiscal year, as of the date of sale, and cumulative gains or losses recognized in other components of equity (before tax effects) are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Fair value at the time of sale	¥1,425	¥363	\$3,330
Cumulative gains (before tax effects)	¥ 960	¥118	\$1,083

(5) Offsetting financial assets and financial liabilities

For some of the financial assets and financial liabilities, the Group has a legally enforceable right to set off the recognized amounts of a financial asset and financial liability, and has the intention to settle on a net basis or realize the asset and settle the liability simultaneously. Accordingly, these financial assets and financial liabilities are offset and the net amount is presented in the consolidated statement of financial position.

Of financial assets and financial liabilities recognized to the same counterparty, the breakdown of the amount offset and the amount recognized in the consolidated statement of financial position are as follows.

	Millions of yen		
	Gross amount of financial assets	Gross amount of financial liabilities set off in the consolidated statement of financial position	Net amount of financial assets presented in the consolidated statement of financial position
Date of transition (April 1, 2018)			
Trade and other receivables	¥99,194	¥2,458	¥96,736
	Gross amount of financial liabilities	Gross amount of financial assets set off in the consolidated statement of financial position	Net amount of financial liabilities presented in the consolidated statement of financial position
Trade and other payables	¥47,177	¥2,458	¥44,719

	Millions of yen		
	Gross amount of financial assets	Gross amount of financial liabilities set off in the consolidated statement of financial position	Net amount of financial assets presented in the consolidated statement of financial position
March 31, 2019			
Trade and other receivables	¥102,760	¥2,449	¥100,311
	Gross amount of financial liabilities	Gross amount of financial assets set off in the consolidated statement of financial position	Net amount of financial liabilities presented in the consolidated statement of financial position
Trade and other payables	¥51,498	¥2,449	¥49,049

	Millions of yen		
	Gross amount of financial assets	Gross amount of financial liabilities set off in the consolidated statement of financial position	Net amount of financial assets presented in the consolidated statement of financial position
March 31, 2020			
Trade and other receivables	¥95,350	¥2,745	¥92,604
	Gross amount of financial liabilities	Gross amount of financial assets set off in the consolidated statement of financial position	Net amount of financial liabilities presented in the consolidated statement of financial position
Trade and other payables	¥46,426	¥2,745	¥43,681

	Thousands of U.S. dollars		
	Gross amount of financial assets	Gross amount of financial liabilities set off in the consolidated statement of financial position	Net amount of financial assets presented in the consolidated statement of financial position
March 31, 2020			
Trade and other receivables	\$874,771	\$25,183	\$849,578
	Gross amount of financial liabilities	Gross amount of financial assets set off in the consolidated statement of financial position	Net amount of financial liabilities presented in the consolidated statement of financial position
Trade and other payables	\$425,927	\$25,183	\$400,743

(6) Hedge accounting

The Group is exposed to currency fluctuation risks associated with foreign currency-denominated trade receivables and the repayment and interest payment of foreign currency-denominated borrowings. The Group uses forward exchange contracts, currency options and interest rate and currency swaps for the purpose of hedging transactions against currency fluctuation risk, but does not apply hedge accounting.

21. Equity and Other Components of Equity

(1) Capital stock and capital surplus

The Companies Act of Japan (hereafter, the “Act”) stipulates that one-half or more of the proceeds from share issue shall be credited to capital stock and the remainder shall be credited to capital reserve included in capital surplus. The Act also stipulates that, by resolution of a general meeting of shareholders, capital reserve may be transferred to capital stock.

Changes in the number of authorized shares, number of issued shares and balance of capital stock, etc. are as follows.

	Number of authorized shares (shares)	Number of issued shares (shares)	Capital stock (Millions of yen)	Capital surplus (Millions of yen)
Date of transition (April 1, 2018)	390,000,000	212,544,820	¥47,869	¥54,756
Changes during the fiscal year (Note 2)	—	(3,633,200)	—	78
March 31, 2019	390,000,000	208,911,620	¥47,869	¥54,835
Changes during the fiscal year (Note 2)	—	(4,736,300)	—	(44)
March 31, 2020	390,000,000	204,175,320	¥47,869	¥54,791

	Number of authorized shares (shares)	Number of issued shares (shares)	Capital stock (Thousands of U.S. dollars)	Capital surplus (Thousands of U.S. dollars)
March 31, 2019	390,000,000	208,911,620	\$439,165	\$503,073
Changes during the fiscal year (Note 2)	—	(4,736,300)	—	(404)
March 31, 2020	390,000,000	204,175,320	\$439,165	\$502,670

(Notes) 1. All the shares issued by the Company are non-par-value ordinary shares with no restrictions on rights, and all issued shares are fully paid.
2. The decrease of issued shares is due to the cancellation of treasury stock.

(2) Retained earnings

The Act stipulates that one-tenth of the dividends of retained earnings shall be accumulated as capital reserve or legal reserve until the aggregate amount of the capital reserve and legal reserve equals one-fourth of the capital stock. The accumulated legal reserve may be appropriated to reduce a deficit. The Act also states that the legal reserve may be used by a resolution at a general meeting of shareholders.

(3) Treasury stock

The Act stipulates that a company may acquire its treasury stock upon determination of the number of shares to be acquired, the total amount to be delivered in exchange for the acquisition and other factors, which must be within the amount available for distribution to its shareholders and approved by a resolution at a general meeting of shareholders. Furthermore, a company may purchase its treasury stock by a resolution of the Board of Directors if such a transaction is undertaken in the market or through a tender offer pursuant to its Articles of Incorporation and within the requirements stipulated in the Act.

Changes in the number and outstanding balance of treasury stock are as follows.

	Number of shares (shares)	Amount (Millions of yen)	Amount (Thousands of U.S. dollars)
Date of transition (April 1, 2018)	2,655,888	¥ 6,422	
Increase	1,733,576	5,002	
Decrease	(3,650,107)	(9,683)	
March 31, 2019	739,357	¥ 1,741	\$ 15,972
Increase	4,774,736	10,074	92,422
Decrease	(4,759,494)	(10,213)	(93,697)
March 31, 2020	754,599	¥ 1,602	\$ 14,697

(Note) The Company's shares held by the BIP Trust and the ESOP Trust are included in the number of treasury stock. The number of shares included was 433,200, 416,402, and 430,908 as of the date of transition, March 31, 2019 and 2020, respectively.

(4) Other components of equity

Exchange differences on translation of foreign operations

These are exchange differences arising from the process of consolidating financial statements of foreign operations prepared in foreign currencies.

Financial assets measured at fair value through other comprehensive income

These are valuation differences in the fair values of equity instruments measured at fair value through other comprehensive income. Cumulative gains or losses that were previously recognized in other comprehensive income have been reclassified to retained earnings in the fiscal year in which those equity instruments were derecognized or significant decrease in the fair value was recorded.

Remeasurements of defined benefit plans

Remeasurements of defined benefit plans consist of actuarial gains and losses as well as the return on the plan assets, excluding amounts included in net interest on the net defined benefit liability. These are recognized in the aggregate amount of other comprehensive income as they occur and transferred immediately to retained earnings.

22. Dividends

The Company distributes retained earnings within the amount available for distribution to the shareholders calculated in accordance with the provisions of the Act. The amount available for distribution to the shareholders is calculated based on the amount of retained earnings on the Company's accounting books prepared in accordance with the Japanese accounting standards.

Dividend payments are as follows.

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)				
Resolution date	Total amount of dividends	Dividends per share	Record date	Effective date
Board of Directors' meeting held on April 27, 2018 (Note 1)	¥6,309 million	¥30	March 31, 2018	June 5, 2018
Board of Directors' meeting held on October 29, 2018 (Note 2)	¥7,300 million	¥35	September 30, 2018	November 30, 2018

(Notes) 1. The total amount of dividend payments based on the resolution of the Board of Directors' meeting held on April 27, 2018 includes ¥12 million of dividends on the Company's shares held by the Directors' Compensation BIP Trust.
2. The total amount of dividends paid based on the resolution of the Board of Directors' meeting held on October 29, 2018 includes ¥14 million of dividends on the Company's shares held by the Directors' Compensation BIP Trust.

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)				
Resolution date	Total amount of dividends	Dividends per share	Record date	Effective date
Board of Directors' meeting held on April 26, 2019 (Note 1)	¥7,300 million (\$66,972 thousand)	¥35 (\$0.32)	March 31, 2019	June 4, 2019
Board of Directors' meeting held on October 28, 2019 (Note 2)	¥7,300 million (\$66,972 thousand)	¥35 (\$0.32)	September 30, 2019	November 29, 2019

(Notes) 1. The total amount of dividend payments based on the resolution of the Board of Directors' meeting held on April 26, 2019 includes ¥14 million (\$128 thousand) of dividends on the Company's shares held by the Directors' Compensation BIP Trust.
2. The total amount of dividend payments based on the resolution of the Board of Directors' meeting held on October 28, 2019 includes ¥15 million (\$138 thousand) of dividends on the Company's shares held by the Directors' Compensation BIP Trust and the ESOP Trust.

Dividends with an effective date in the following fiscal year are as follows.

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)					
Resolution date	Source of dividends	Total amount of dividends	Dividends per share	Record date	Effective date
Board of Directors' meeting held on April 26, 2019	Retained earnings	¥7,300 million	¥35	March 31, 2019	June 4, 2019

(Note) The total amount of dividend payments includes ¥14 million of dividends on the Company's shares held by the Directors' Compensation BIP Trust.

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)					
Resolution date	Source of dividends	Total amount of dividends	Dividends per share	Record date	Effective date
Board of Directors' meeting held on May 25, 2020	Retained earnings	¥7,134 million (\$65,450 thousand)	¥35 (\$0.32)	March 31, 2020	June 17, 2020

(Note) The total amount of dividend payments includes ¥15 million (\$138 thousand) of dividends on the Company's shares held by the Directors' Compensation BIP Trust and the ESOP Trust.

23. Share-based Payments

The Company has in place equity-settled share-based payment plans for its directors and executive officers.

Expenses recorded in association with the share-based payment plans were ¥136 million and ¥113 million (\$1,037 thousand) in the fiscal years ended March 31, 2019 and 2020, respectively.

(1) BIP (Board Incentive Plan) Trust scheme

The Company has adopted a scheme called “BIP Trust” for its directors and executive officers (hereafter, the “Directors, etc.”), with the aim of further raising their awareness to contribute to the Group's medium- to long-term performance and improvement of corporate value.

This is a performance-linked share-based payment plan, under which the Company's shares are acquired through the BIP Trust, using cash contributed by the Company, and based on the number of points granted (1 point = 1 share). In accordance with the Company's share delivery rules, shares of the Company are delivered, and an amount of money equivalent to the conversion value of the Company's shares is paid, to the respective Directors, etc.

Vesting conditions require, in principle, that the Directors, etc. must have served continuously in the position of Directors, etc. from the grant date to the vesting date.

In the plan, no exercise price is set as the Company's shares are granted, and the amount of money equivalent to the conversion value of the Company's shares is paid, both through the BIP Trust.

The weighted-average fair value of the BIP Trust as of the grant date was ¥2,371 and ¥1,959 (\$17.97) in the fiscal years ended March 31, 2019 and 2020, respectively. These fair values are measured by reference to the fair values calculated using the Black-Scholes model.

Assumptions used in the model are as follows.

	2019	2020
Share price	¥2,563	¥2,115 (\$19.40)
Expected volatility (Note)	36.3%	32.4%
Expected remaining term	3.3 years	2.3 years
Expected dividend yield	2.3%	3.3%
Risk-free rate	(0.1)%	(0.2)%

(Note) The expected volatility is calculated based on historical price performance over the expected remaining period.

(2) Employee Stock Ownership Plan (ESOP) Trust

The Company has adopted the ESOP Trust for its employment-type corporate officers (hereafter, “eligible persons”), with the aim of infusing among the eligible persons a sense of belonging to the Company and a sense of management participation, and raising their motivation and morale to contribute to the long-term enhancement of the Group's performance and rise in the stock price.

This is a performance-linked share-based payment plan, under which the Company's shares are acquired through the ESOP Trust using the funds provided by the Company and, based on the number of points granted (1 point = 1 share) to the eligible persons in accordance with the Company's share delivery rules, shares of the Company are delivered, and an amount of money equivalent to the conversion value of the Company's shares is paid, to the respective eligible persons.

Vesting conditions require, in principle, that the eligible persons must have been in service retaining the eligibility from the grant date to the vesting date.

In the plan, no exercise price is set as the Company's shares are granted, and the amount of money equivalent to the conversion value of the Company's shares is paid, both through the ESOP Trust.

The weighted-average fair value of the ESOP Trust as of the grant date in the fiscal year ended March 31, 2020 was ¥1,762 (\$16.17). (Not applicable to the fiscal year ended March 31, 2019.) These fair values are measured by reference to the fair values calculated using the Black-Scholes model.

Assumptions used in the model are as follows.

	2019	2020
Share price	—	¥1,908 (\$17.50)
Expected volatility (Note)	—	33.2%
Expected remaining term	—	2.2 years
Expected dividend yield	—	3.7%
Risk-free rate	—	(0.2)%

(Note) The expected volatility is calculated based on the historical price performance over the expected remaining period.

24. Revenue

(1) Revenue recognized from contracts with customers

The components of “revenue” in the consolidated statement of profit or loss in the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Revenue recognized from contracts with customers	¥424,929	¥425,798	\$3,906,404
Revenue recognized from other sources	179	274	2,514
Total	¥425,109	¥426,073	\$3,908,927

(Note) Revenue recognized from other sources includes revenue from lease contracts as defined under IFRS 16.

(2) Disaggregation of revenue

Revenue recognized from contracts with customers is disaggregated by segment based on contracts with customers. The Group is composed of business units identified by business-unit-based products as the Group is able to obtain separate financial information and the Board of Directors conduct periodic reviews to determine the allocation of management resources and evaluate business results. The relationship between disaggregated revenue and segment revenue is as follows.

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)		Millions of yen
Automotive components		¥356,422
Plugs		213,778
Sensors		142,644
Technical ceramics		¥ 58,100
Semiconductor		17,089
Ceramics		41,010
Other		¥ 10,586
Total		¥425,109

(Note) The table above includes “revenue recognized from contracts with customers” and “revenue recognized from other sources.”

Fiscal year ended March 31, 2020 (April 1, 2019 to March 31, 2020)

	Millions of yen	Thousands of U.S. dollars
Automotive components	¥348,711	\$3,199,183
Plugs	207,752	1,905,982
Sensors	140,959	1,293,202
Technical ceramics	¥ 52,220	\$ 479,083
Semiconductor	16,517	151,532
Ceramics	35,702	327,541
Other	¥ 25,141	\$ 230,651
Total	¥426,073	\$3,908,927

(Note) The table above includes “revenue recognized from contracts with customers” and “revenue recognized from other sources.”

The “Automotive components” segment principally manufactures and sells automotive components, and consists of two subsegments: “Plugs” is engaged in spark plugs and glow plugs; and “Sensors” is engaged in exhaust gas sensors and other types of automotive sensors. The “Technical ceramics” segment has two subsegments: “Semiconductor,” which manufactures and sells semiconductors, IC packages for various devices, multilayer circuit boards, and other products; and “Ceramics,” which manufactures and sells cutting tools, ceramic products for industrial use, components for semiconductor manufacturing equipment and other products.

In the sale of these products, revenue is recognized at a point in time when the control of the product is passed to the customer; that is, when the product is shipped to a location specified by the customer, and is delivered to and accepted by the customer, upon which the legal title to and the physical possession of the product, as well as the significant risks and rewards of ownership of the product transfer to the customer. No significant financing component is included in the consideration promised by the customer obligations as, following recognition of the revenue, it is received within one year after the performance obligations are satisfied.

There are instances when the products of the “Automotive components” segment are sold with variable considerations including rebates that are conditional upon achievement of certain targets such as sales targets in terms of volume and amount (hereafter, “achievement rebates”). In such cases, the transaction price is measured at the amount of consideration promised in the contract with the customer, less the estimated amount of achievement rebate or other variable consideration. Achievement rebates are estimated using the most likely amount method, which is based on past results and other data, and revenue is recognized only to the extent that it is highly probable that no significant reversal of recognized revenue will occur.

(3) Contract liabilities

Contract liabilities relate primarily to payments received from customers in advance. The balance of contract liabilities as of the date of transition, March 31, 2019 and 2020 is as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Contract liabilities	¥501	¥405	¥342	\$3,138

The amounts of all contract liabilities relating to the respective fiscal years ended March 31, 2019 and 2020 included in the opening balance were recognized as revenue for the fiscal years ended March 31, 2019 and 2020.

25. Selling, General and Administrative Expenses

The components of “Selling, general and administrative expenses” in the consolidated statement of profit or loss for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Depreciation and amortization	¥ 4,370	¥ 5,509	\$ 50,541
Retirement benefit costs	1,009	1,184	10,862
Director compensation and employee salaries and allowances	32,338	34,262	314,330
Packaging and transportation expenses	10,955	8,580	78,716
Advertising expenses	6,389	5,612	51,486
Other	29,533	32,142	294,881
Total	¥84,597	¥87,292	\$800,844

26. Other Income and Expenses

The components of other income for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Gain on sale of property, plant and equipment	¥ 354	¥ 39	\$ 358
Insurance income	255	57	523
Other	1,380	1,445	13,257
Total	¥1,989	¥1,542	\$14,147

The components of other expenses for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Product compensation expenses	¥1,072	¥187	\$1,716
Environment expenses	254	—	—
Other	1,343	531	4,872
Total	¥2,670	¥718	\$6,587

27. Finance Income and Finance Expenses**(1) Finance income**

The components of finance income for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Interest income			
Financial assets measured at amortized cost	¥ 920	¥ 675	\$ 6,193
Dividend income			
Financial assets measured at fair value through other comprehensive income (Note)	1,489	1,492	13,688
Gain on valuation of derivatives	922	843	7,734
Other	19	56	514
Total	¥3,351	¥3,068	\$28,147

(Note) Dividend income includes income from financial assets measured at fair value through other comprehensive income that were derecognized during each fiscal year. This income from financial assets is not presented as a separate component as the amount is immaterial.

(2) Finance expenses

The components of finance expenses for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Interest expense			
Financial liabilities measured at amortized cost (Note)	¥ 767	¥ 899	\$ 8,248
Foreign exchange loss (net)	1,223	5,833	53,514
Other	32	33	303
Total	¥2,023	¥6,766	\$62,073

(Note) Interest expense associated with lease liabilities is stated in “Note 12: Leases.”

28. Income Taxes**(1) Deferred tax assets and deferred tax liabilities**

The components of major causes of deferred tax assets and deferred tax liabilities are as follows.

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)

	Millions of yen				
	Balance as at April 1, 2018	Recognized through profit or loss	Recognized through other comprehensive income	Other (Note)	Balance as at March 31, 2019
Deferred tax assets					
Operating loss carryforwards	¥ 1,599	¥ (329)	¥ —	¥ 208	¥ 1,478
Retirement benefit liabilities	6,983	612	342	(16)	7,922
Property, plant and equipment, and intangible assets	2,172	(74)	—	0	2,098
Accrued expenses	3,955	155	—	3	4,114
Inventories	2,486	412	—	5	2,904
Unrealized gains	5,343	645	—	—	5,988
Other	4,391	(80)	—	12	4,323
Total	¥26,931	¥1,342	¥ 342	¥ 213	¥28,830
Deferred tax liabilities					
Retained earnings of affiliates	3,357	531	—	—	3,889
Valuation differences on securities	14,039	0	(2,783)	—	11,256
Property, plant and equipment, and intangible assets	2,114	430	—	733	3,278
Other	308	(14)	—	78	371
Total	¥19,819	¥ 948	¥(2,783)	¥ 811	¥18,796
Net deferred tax assets (liabilities)	¥ 7,112	¥ 394	¥ 3,125	¥(598)	¥10,034

(Note) Foreign currency translation differences are included in "Other."

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

	Millions of yen				
	Balance as at April 1, 2019	Recognized through profit or loss	Recognized through other comprehensive income	Other (Note)	Balance as at March 31, 2020
Deferred tax assets					
Operating loss carryforwards	¥ 1,478	¥ (59)	¥ —	¥ 471	¥ 1,890
Retirement benefit liabilities	7,922	468	101	(57)	8,434
Property, plant and equipment, and intangible assets	2,098	649	—	(2)	2,745
Accrued expenses	4,114	(234)	—	(39)	3,840
Inventories	2,904	20	—	(42)	2,881
Unrealized gains	5,988	(202)	—	—	5,786
Other	4,323	(6)	622	(135)	4,804
Total	¥28,830	¥ 635	¥ 724	¥ 192	¥30,383
Deferred tax liabilities					
Retained earnings of affiliates	3,889	106	—	—	3,995
Valuation difference on securities	11,256	8	(2,736)	—	8,529
Property, plant and equipment, and intangible assets	3,278	84	—	(184)	3,177
Other	371	52	—	(15)	409
Total	¥18,796	¥ 251	¥(2,736)	¥(200)	¥16,111
Net deferred tax assets (liabilities)	¥10,034	¥ 384	¥ 3,460	¥ 393	¥14,272

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

	Thousands of U.S. dollars				
	Balance as at April 1, 2019	Recognized through profit or loss	Recognized through other comprehensive income	Other (Note)	Balance as at March 31, 2020
Deferred tax assets					
Operating loss carryforwards	\$ 13,560	\$ (541)	\$ —	\$ 4,321	\$ 17,339
Retirement benefit liabilities	72,679	4,294	927	(523)	77,376
Property, plant and equipment, and intangible assets	19,248	5,954	—	(18)	25,183
Accrued expenses	37,743	(2,147)	—	(358)	35,229
Inventories	26,642	183	—	(385)	26,431
Unrealized gains	54,936	(1,853)	—	—	53,083
Other	39,661	(55)	5,706	(1,239)	44,073
Total	\$264,495	\$ 5,826	\$ 6,642	\$ 1,761	\$278,743
Deferred tax liabilities					
Retained earnings of affiliates	35,679	972	—	—	36,651
Valuation difference on securities	103,266	73	(25,101)	—	78,248
Property, plant and equipment, and intangible assets	30,073	771	—	(1,688)	29,147
Other	3,404	477	—	(138)	3,752
Total	\$172,440	\$ 2,303	\$(25,101)	\$(1,835)	\$147,807
Net deferred tax assets (liabilities)	\$ 92,055	\$ 3,523	\$ 31,743	\$ 3,606	\$130,936

(Note) Foreign currency translation differences are included in "Other."

Deferred tax assets and deferred tax liabilities in the consolidated statement of financial position as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Deferred tax assets	¥10,137	¥10,603	¥14,296	\$131,156
Deferred tax liabilities	3,024	568	24	220
Net deferred tax assets	¥7,112	¥10,034	¥14,272	\$130,936

Deductible temporary differences, tax loss carryforwards and tax credit carryforwards for which no deferred tax assets were recognized as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Deductible temporary differences	¥18,773	¥18,451	¥ 9,762	\$ 89,560
Tax loss carryforwards and tax credit carryforwards	¥10,490	¥12,539	¥16,165	\$148,303

The expiration schedule of tax loss carryforwards and tax credit carryforwards for which no deferred tax assets were recognized as of the date of transition, March 31, 2019 and 2020 is as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
First year	¥ 1,605	¥ 215	¥ 14	\$ 128
Second year	38	—	1	9
Third year	—	—	—	—
Fourth year	—	—	—	—
Fifth year and beyond	8,847	12,323	16,148	148,147
Total	¥10,490	¥12,539	¥16,165	\$148,303

Taxable temporary differences associated with investments in consolidated subsidiaries and associates for which no deferred tax liabilities were recognized as of the date of transition, March 31, 2019 and 2020 are as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	2019	2020	2020
Total of taxable temporary differences associated with investments in consolidated subsidiaries and associates	¥70	¥62	¥39	\$358

The Company does not recognize deferred tax liabilities for taxable temporary differences associated with investments in consolidated subsidiaries other than undistributed earnings that are expected to be distributed at the end of the fiscal year. This is because it is highly probable that the Group will be able to control the timing of the reversal of the temporary differences and that the taxable temporary differences will not reverse in the foreseeable future.

(2) Income tax expenses

The components of income tax expenses for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Current tax expense	¥16,220	¥11,502	\$105,523
Deferred tax expense (Note)	(394)	(384)	(3,523)
Total	¥15,826	¥11,118	\$102,000

(Note) Deferred tax expense includes the amount of previously unrecognized temporary differences of a prior period. Accordingly, deferred tax expense decreased by ¥1,849 million (\$16,963 thousand) in the fiscal year ended March 31, 2020.

(3) Reconciliation of combined statutory tax rate

Reconciliation of combined statutory tax rate and average effective tax rate for the years ended March 31, 2019 and 2020 are as follows.

	Percentage	
	2019	2020
Combined statutory tax rate	30.6	30.6
(Reconciliation)		
Permanently non-deductible expenses	0.3	0.9
Permanently non-taxable income	(0.9)	(0.4)
Tax credits for experimental research costs, etc.	(3.5)	(3.3)
Differences in statutory tax rates of overseas consolidated subsidiaries	(0.8)	(0.9)
The reassessment of the recoverability of deferred tax assets	1.3	(1.5)
Retained earnings of associates	0.9	0.3
Other	0.0	(0.9)
Average effective tax rates	27.9	24.8

(Note) The Company is subject to Japanese corporate tax, inhabitant tax and business tax, and the combined statutory tax rates calculated based on these for the fiscal years ended March 31, 2019 and 2020 were both 30.6%. Overseas consolidated subsidiaries are subject to income taxes at their respective locations.

29. Earnings per Share

(1) Per share information

	Yen		U.S. dollar
	2019	2020	2020
Basic earnings per share	¥194.55	¥163.06	\$1.50

(Note) Diluted earnings per share information is omitted because the Company does not have dilutive potential ordinary shares.

(2) The basis for the calculation of basic earnings per share for the years ended March 31, 2019 and 2020 is as follows.

Item	Yen		U.S. dollar
	2019	2020	2020
Profit attributable to owners of the parent	¥40,515	¥33,698	\$309,156

	Thousands of shares	
	2019	2020
Weighted-average number of ordinary shares during the year	208,255	206,665

(Note) In the calculation of basic earnings per share, the Company's shares held by the BIP Trust and the ESOP Trust are deducted from the weighted-average number of ordinary shares.

30. Other Comprehensive Income

The components of other comprehensive income and their tax effects (including noncontrolling interests) for the years ended March 31, 2019 and 2020 are as follows.

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)

	Millions of yen				
	Amount arising during the fiscal year	Reclassification adjustments	Before tax effects	Amount of tax effects	Net of tax effects
Items that will not be reclassified to profit or loss					
Financial assets measured at fair value through other comprehensive income	¥ (8,084)	¥—	¥ (8,084)	¥2,489	¥(5,594)
Remeasurements of defined benefit plans	(1,123)	—	(1,123)	342	(781)
Share of other comprehensive income of investments accounted for using the equity method	(26)	—	(26)	6	(20)
Total of items that will not be reclassified to profit or loss	¥ (9,234)	¥—	¥ (9,234)	¥2,838	¥(6,395)
Items that may be reclassified subsequently to profit or loss					
Exchange differences on translation of foreign operations	(3,252)	—	(3,252)	—	(3,252)
Share of other comprehensive income of investments accounted for using the equity method	(54)	—	(54)	—	(54)
Total of items that may be reclassified subsequently to profit or loss	¥ (3,306)	¥—	¥ (3,306)	¥ —	¥(3,306)
Total of other comprehensive income	¥(12,541)	¥—	¥(12,541)	¥2,838	¥(9,702)

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

	Millions of yen				
	Amount arising during the fiscal year	Reclassification adjustments	Before tax effects	Amount of tax effects	Net of tax effects
Items that will not be reclassified to profit or loss					
Financial assets measured at fair value through other comprehensive income	¥(10,863)	¥—	¥(10,863)	¥3,328	¥ (7,535)
Remeasurements of defined benefit plans	(812)	—	(812)	101	(710)
Share of other comprehensive income of investments accounted for using the equity method	(5)	—	(5)	—	(5)
Total of items that will not be reclassified to profit or loss	¥(11,681)	¥—	¥(11,681)	¥3,430	¥ (8,251)
Items that may be reclassified subsequently to profit or loss					
Exchange differences on translation of foreign operations	(11,975)	—	(11,975)	—	(11,975)
Share of other comprehensive income of investments accounted for using the equity method	(576)	—	(576)	—	(576)
Total of items that may be reclassified subsequently to profit or loss	¥(12,551)	¥—	¥(12,551)	¥—	¥(12,551)
Total of other comprehensive income	¥(24,233)	¥—	¥(24,233)	¥3,430	¥(20,803)

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

	Thousands of U.S. dollars				
	Amount arising during the fiscal year	Reclassification adjustments	Before tax effects	Amount of tax effects	Net of tax effects
Items that will not be reclassified to profit or loss					
Financial assets measured at fair value through other comprehensive income	\$ (99,661)	\$—	\$ (99,661)	\$30,532	\$ (69,128)
Remeasurements of defined benefit plans	(7,450)	—	(7,450)	927	(6,514)
Share of other comprehensive income of investments accounted for using the equity method	(46)	—	(46)	—	(46)
Total of items that will not be reclassified to profit or loss	\$(107,165)	\$—	\$(107,165)	\$31,468	\$ (75,697)
Items that may be reclassified subsequently to profit or loss					
Exchange differences on translation of foreign operations	(109,862)	—	(109,862)	—	(109,862)
Share of other comprehensive income of investments accounted for using the equity method	(5,284)	—	(5,284)	—	(5,284)
Total of items that may be reclassified subsequently to profit or loss	\$(115,147)	\$—	\$(115,147)	\$ —	\$(115,147)
Total of other comprehensive income	\$(222,321)	\$—	\$(222,321)	\$31,468	\$(190,853)

31. Changes in Liabilities Arising from Financing Activities

Changes in liabilities arising from financing activities for the years ended March 31, 2019 and 2020 are as follows.

Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019)

	Millions of yen						
	April 1, 2018	Cash flows	Non-cash changes				March 31, 2019
			Foreign currency exchange differences	New lease contracts	Changes arising from acquisition of control in subsidiaries	Other	
Short-term loans payable	¥ 10,113	¥15,722	¥ 431	¥ —	¥1,319	¥ —	¥ 27,587
Long-term loans payable	29,904	138	1,183	—	—	4	31,230
Bonds	54,902	(5,107)	—	—	—	47	49,842
Lease liabilities	8,993	(2,231)	(113)	2,893	146	(10)	9,678
Total	¥103,913	¥ 8,522	¥1,502	¥2,893	¥1,466	¥ 41	¥118,339

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

	Millions of yen						
	April 1, 2019	Cash flows	Non-cash changes				March 31, 2020
			Foreign currency exchange differences	New lease contracts	Changes arising from acquisition of control in subsidiaries	Other	
Short-term loans payable	¥ 27,587	¥(16,404)	¥(250)	¥ —	¥—	¥ —	¥ 10,931
Long-term loans payable	31,230	20,076	787	—	—	(106)	51,987
Bonds	49,842	29,852	—	—	—	48	79,743
Lease liabilities	9,678	(2,637)	(296)	3,453	—	83	10,283
Total	¥118,339	¥ 30,887	¥ 240	¥3,453	¥—	¥ 25	¥152,946

Fiscal year ended March 31, 2020 (from April 1, 2019 to March 31, 2020)

	Thousands of U.S. dollars						
	April 1, 2019	Cash flows	Non-cash changes				March 31, 2020
			Foreign currency exchange differences	New lease contracts	Changes arising from acquisition of control in subsidiaries	Other	
Short-term loans payable	\$ 253,092	\$(150,495)	\$(2,294)	\$ —	\$—	\$ —	\$ 100,284
Long-term loans payable	286,514	184,183	7,220	—	—	(972)	476,945
Bonds	457,266	273,872	—	—	—	440	731,587
Lease liabilities	88,789	(24,193)	(2,716)	31,679	—	761	94,339
Total	\$1,085,679	\$ 283,367	\$ 2,202	\$31,679	\$—	\$ 229	\$1,403,174

32. Major Subsidiaries

The Company's major subsidiaries are mentioned on the Company's website (<https://www.ngkntk.co.jp/>).

33. Related parties

(1) Transactions with related parties

This information is omitted as neither material related-party transactions nor material outstanding balances of receivables and payables were noted.

(2) Compensation to key management personnel

Compensation to key management personnel for the years ended March 31, 2019 and 2020 are as follows.

	Millions of yen		Thousands of U.S. dollars
	2019	2020	2020
Remuneration and bonuses	¥1,033	¥ 901	\$8,266
Share-based payments	136	113	1,037
Total	¥1,169	¥1,014	\$9,303

(Notes) 1. Key management personnel are the Company's directors and executive officers working in the fiscal years ended March 31, 2019 and 2020.
2. The amounts of share-based payments are the amounts expensed in the fiscal years ended March 31, 2019 and 2020.

34. Contingencies

(1) Guarantee obligations

The Group provides guarantees for borrowings from financial institutions taken by the Group's employees, as follows.

	Millions of yen			Thousands of U.S. dollars
	Date of transition (April 1, 2018)	March 31, 2019	March 31, 2020	March 31, 2020
Guarantees of employees' obligations	¥11	¥8	¥5	\$46
Total	¥11	¥8	¥5	\$46

(2) Litigation, etc.

The Group is subject to investigations by foreign authorities on alleged antitrust violations in relation to certain past transactions in the automotive components business. In connection with the investigations, discussions are ongoing with some customers on compensation for damages while for other customers, civil lawsuits have been filed. Currently, no provision is recognized as the provision criteria are not met. In accordance with IAS 37 "Provisions, Contingent Liabilities and Contingent Assets," detailed description of the legal proceedings, etc. is not disclosed to avoid putting the Group at a disadvantage.

35. Subsequent Events

There are no items to report.

36. First-time Adoption (disclosure relating to transition to IFRS)

The consolidated financial statements for the fiscal year ended March 31, 2020 are the first set of financial statements prepared in conformity with International Financial Reporting Standards. The most recent consolidated financial statements prepared in accordance with the generally accepted accounting principles in Japan (hereafter, "Japanese GAAP") are those for the fiscal year ended March 31, 2019. The date of transition from Japanese GAAP to IFRS was April 1, 2018.

(1) Exemptions under IFRS 1

In principle, IFRS requires an entity adopting IFRS for the first time to apply IFRS retrospectively. However, IFRS 1 establishes certain exemptions from retrospective application of the standards, consisting of mandatory exceptions and optional exemptions. The effect of applying these exemption provisions is adjusted through retained earnings or other components of equity as of the date of transition to IFRS. The main optional exemptions that the Company applied are the following.

• Business combinations

IFRS 1 allows the option not to apply IFRS 3 "Business Combinations" retrospectively to past business combinations. If retrospective application is chosen, all subsequent business combinations should be restated in accordance with IFRS 3.

The Group has decided not to apply IFRS 3 retrospectively to business combinations that occurred prior to the date of transition. As a result, no adjustment is made to goodwill arising from business combinations that occurred prior to the date of transition, which is stated at the carrying amount recognized in accordance with Japanese GAAP. For such goodwill, irrespective of whether an indication of impairment existed, an impairment test was conducted at the date of transition.

• Deemed cost

For property, plant and equipment, IFRS 1 allows the use of fair values at the date of transition as deemed cost as of the same date. The Group has applied this exemption for certain items of property, plant and equipment, and uses their fair values at the date of transition as deemed cost as of the same date.

• Exchange differences on translation of foreign operations

IFRS 1 allows cumulative exchange differences on translation of foreign operations at the date of transition to be reset to zero. The Group has decided to reset the cumulative exchange differences on translation of foreign operations to zero at the date of transition, with the differences recognized as retained earnings.

• Designation of financial instruments that were recognized prior to the date of transition

IFRS 1 allows an entity to designate financial assets in accordance with IFRS 9 "Financial Instruments" based on the facts and circumstances existing at the date of transition. The Group has designated financial instruments in its holding based on the circumstances existing at the date of transition.

• Leases

IFRS 1 allows an entity to determine whether or not an arrangement contains a lease at the date of transition. The Group has assessed whether or not an arrangement contained a lease on the basis of facts and circumstances existing at the date of transition. Additionally, IFRS 1 permits an entity to measure right-of-use assets at the date of transition at an amount equal to the lease liability after adjustments for prepaid lease payments, etc. that is recognized in the consolidated statement of financial position for the fiscal year immediately preceding the date of transition. The Group measured right-of-use assets at the date of transition at an amount equal to the lease liability after adjustments for prepaid lease payments, etc.

(2) Mandatory exceptions to retrospective application of IFRS 1

IFRS 1 prohibits retrospective application of some items of IFRS including “estimates,” “derecognition of financial assets and financial liabilities,” “noncontrolling interests” and “classification and measurement of financial assets.” For these items, the Group is applying IFRS prospectively from the date of transition.

(3) Reconciliation

Reconciliations required under IFRS 1 are as follows. Items that do not affect retained earnings and comprehensive income are presented in “Reclassifications,” and items that affect retained earnings and comprehensive income are presented in “Differences in recognition and measurement.”

Note that on December 20, 2018, the Group acquired all of the shares of CAIRE Inc., CAIRE Medical Limited and CAIRE Medical Technology (Chengdu) Co., Ltd. (hereafter, “CAIRE”), which, together with its five subsidiaries, became the Group’s subsidiaries. Because allocations of the acquisition costs had not been completed, a provisional treatment of these transactions was made in the fiscal year ended March 31, 2019. This accounting was finalized in the fiscal year ended March 31, 2020. The final numbers are reflected in the reconciliation of equity as of March 31, 2019 (the most recent closing date of the consolidated financial statements prepared in accordance with Japanese GAAP), and in the reconciliation of profit or loss and other comprehensive income relating to the fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019) (the most recent fiscal year for which the consolidated financial statements were prepared under Japanese GAAP).

Reconciliation of equity at the date of transition (April 1, 2018)

Millions of yen						
Accounts under Japanese GAAP	Japanese GAAP	Reclassifications	Differences in recognition and measurement	IFRS	Notes	Accounts under IFRS
Assets						Assets
Current assets						Current assets
Cash and deposits equivalents	¥ 56,235	¥ 31,143	¥ 101	¥ 87,479	O	Cash and cash
Notes and accounts receivable — trade	¥ 93,615	¥ 5,806	¥ (2,686)	¥ 96,736	A	Trade and other receivables
Short-term investment securities	¥ 59,905	¥(30,829)	¥ 457	¥ 29,533	B, O, P	Other financial assets
Inventories	¥ 94,953	—	¥ 2,792	¥ 97,746	A	Inventories
Other	¥ 15,076	¥ (6,871)	¥ 541	¥ 8,745	C	Other current assets
Allowance for doubtful accounts	¥ (751)	¥ 751	—	—		
Total current assets	¥319,035	—	¥ 1,205	¥320,241		Total current assets
Noncurrent assets						Noncurrent assets
Property, plant and equipment	¥195,102	¥ (211)	¥11,619	¥206,510	D, F	Property, plant and equipment
Intangible assets	¥ 5,114	¥ (257)	¥ 1,842	¥ 6,699	H	Goodwill and intangible assets
	—	¥ 468	¥ 7,118	¥ 7,587	C	Right-of-use assets
Investment securities	¥ 71,680	¥(59,331)	¥ 704	¥ 13,054		Investments accounted for using the equity method
Deferred tax assets	¥ 7,672	¥ 837	¥ 1,627	¥ 10,137	I	Deferred tax assets
Other	¥ 1,487	¥ (495)	¥ 1,141	¥ 2,132	C	Other noncurrent assets
Allowance for doubtful accounts	¥ (119)	¥ 59,827	¥ 763	¥ 60,470	J, P	Other financial assets
Total noncurrent assets	¥280,936	¥ 837	¥24,818	¥306,592		Total noncurrent assets
Total assets	¥599,972	¥ 837	¥26,024	¥626,833		Total assets

Millions of yen						
Accounts under Japanese GAAP	Japanese GAAP	Reclassifications	Differences in recognition and measurement	IFRS	Notes	Accounts under IFRS
Liabilities						Liabilities
Current liabilities						Current liabilities
Accounts payable — trade	¥ 32,407	¥ 12,050	¥ 261	¥ 44,719		Trade and other payables
Short-term loans payable	¥ 10,113	¥ 34,962	¥ (281)	¥ 44,793	B	Bonds and borrowings
Current portion of bonds payable	¥ 25,000	¥(25,000)	—	—		
Current portion of long-term loans payable	¥ 9,962	¥ (9,962)	—	—		
Lease obligations	¥ 43	—	¥ 2,053	¥ 2,096	C, P	Other financial liabilities
Income taxes payable	¥ 13,040	¥ (831)	—	¥ 12,209		Income taxes payable
Other	¥ 39,641	¥(11,219)	¥ 5,647	¥ 34,069	K	Other current liabilities
Total current liabilities	¥130,208	—	¥ 7,681	¥137,889		Total current liabilities
Noncurrent liabilities						Noncurrent liabilities
Bonds payable	¥ 30,000	¥ 22,886	¥ (2,759)	¥ 50,126	B	Bonds and borrowings
Long-term loans payable	¥ 22,886	¥(22,886)	—	—		
Lease obligations	¥ 111	¥ 236	¥ 9,978	¥ 10,326	B, C, P	Other financial liabilities
Net defined benefit liabilities	¥ 27,443	—	¥ (2,399)	¥ 25,043	L	Net defined benefit liabilities
Provision for stock benefits	¥ 92	¥ (92)	—	—		
Deferred tax liabilities	¥ 169	¥ 837	¥ 2,017	¥ 3,024	I	Deferred tax liabilities
Other	¥ 945	¥ (143)	¥ 2,010	¥ 2,811	K	Other noncurrent liabilities
Total noncurrent liabilities	¥ 81,648	¥ 837	¥ 8,847	¥ 91,333		Total noncurrent liabilities
Total liabilities	¥211,856	¥ 837	¥ 16,528	¥229,222		Total liabilities
Net assets						Equity
Capital stock	¥ 47,869	—	—	¥ 47,869		Capital stock
Capital surplus	¥ 54,639	—	¥ 116	¥ 54,756		Capital surplus
Retained earnings	¥278,374	—	¥(11,285)	¥267,089	M, N	Retained earnings
Treasury stock	¥ (6,422)	—	—	¥ (6,422)		Treasury stock
Total accumulated other comprehensive income	¥ 11,200	—	¥ 20,539	¥ 31,739	L, M	Other components of equity
	¥385,661	—	¥ 9,371	¥395,032		Total equity attributable to owners of the parent
Noncontrolling interests	¥ 2,454	—	¥ 124	¥ 2,578		Noncontrolling interests
Total net assets	¥388,115	—	¥ 9,495	¥397,611		Total equity
Total liabilities and net assets	¥599,972	¥ 837	¥ 26,024	¥626,833		Total liabilities and equity

Reconciliation of equity as of March 31, 2019

Accounts under Japanese GAAP	Millions of yen				Notes	Accounts under IFRS
	Japanese GAAP	Reclassifications	Differences in recognition and measurement	IFRS		
Assets						Assets
Current assets						Current assets
Cash and deposits	¥ 48,639	¥ 25,611	¥ 154	¥ 74,404	O	Cash and cash equivalents
Notes and accounts receivable — trade	¥ 96,834	¥ 6,120	¥ (2,643)	¥100,311	A	Trade and other receivables
Short-term investment securities	¥ 34,921	¥(25,498)	—	¥ 9,423	O, P	Other financial assets
Inventories	¥113,124	—	¥ 2,611	¥115,735	A	Inventories
Other	¥ 18,423	¥ (7,075)	¥ 515	¥ 11,862	C	Other current assets
Allowance for doubtful accounts	¥ (841)	¥ 841	—	—		
Total current assets	¥311,100	—	¥ 636	¥311,737		Total current assets
Noncurrent assets						Noncurrent assets
Property, plant and equipment	¥228,720	¥ (234)	¥ 9,526	¥238,012	D, E, F	Property, plant and equipment
Intangible assets	¥ 13,658	¥ (234)	¥ 2,253	¥ 15,678	G, H	Goodwill and intangible assets
	—	¥ 468	¥ 8,123	¥ 8,591	C	Right-of-use assets
Investment securities	¥ 63,310	¥(51,198)	¥ 1,067	¥ 13,179	G	Investments accounted for using the equity method
Deferred tax assets	¥ 11,235	¥ (1,875)	¥ 1,242	¥ 10,603	I	Deferred tax assets
Other	¥ 1,510	¥ (616)	¥ 685	¥ 1,579	C	Other noncurrent assets
Allowance for doubtful accounts	¥ (119)	¥ 51,814	¥ 852	¥ 52,547	J, P	Other financial assets
Total noncurrent assets	¥318,316	¥ (1,875)	¥23,751	¥340,192		Total noncurrent assets
Total assets	¥629,417	¥ (1,875)	¥24,388	¥651,929		Total assets

Accounts under Japanese GAAP	Millions of yen				Notes	Accounts under IFRS
	Japanese GAAP	Reclassifications	Differences in recognition and measurement	IFRS		
Liabilities						Liabilities
Current liabilities						Current liabilities
Accounts payable — trade	¥ 34,957	¥ 14,169	¥ (77)	¥ 49,049		Trade and other payables
Short-term loans payable	¥ 27,587	¥ 9,924	¥ (1,044)	¥ 36,466	B	Bonds and borrowings
Current portion of long-term loans payable	¥ 9,924	¥ (9,924)	—	—		
Lease obligations	¥ 52	¥ 55	¥ 2,173	¥ 2,281	C, P	Other financial liabilities
Income taxes payable	¥ 9,126	¥ (681)	¥ 10	¥ 8,456		Income taxes payable
Other	¥ 40,734	¥(13,543)	¥ 6,141	¥ 33,332	K	Other current liabilities
Total current liabilities	¥122,382	—	¥ 7,203	¥129,586		Total current liabilities
Noncurrent liabilities						Noncurrent liabilities
Bonds payable	¥ 50,000	¥ 23,062	¥ (867)	¥ 72,194	B	Bonds and borrowings
Long-term loans payable	¥ 23,062	¥(23,062)	—	—		
Lease obligations	¥ 129	¥ 298	¥ 8,736	¥ 9,164	B, C, P	Other financial liabilities
Net defined benefit liabilities	¥30,254	—	¥ (3,054)	¥ 27,199	L	Net defined benefit liabilities
Provision for stock benefits	¥ 201	¥ (201)	—	—		
Deferred tax liabilities	¥ 618	¥ (1,875)	¥ 1,825	¥ 568	I	Deferred tax liabilities
Other	¥ 1,262	¥ (96)	¥ 2,059	¥ 3,225	K	Other noncurrent liabilities
Total noncurrent liabilities	¥105,528	¥ (1,875)	¥ 8,698	¥112,352		Total noncurrent liabilities
Total liabilities	¥227,911	¥ (1,875)	¥ 15,902	¥241,938		Total liabilities
Net assets						Equity
Capital stock	¥ 47,869	—	—	¥ 47,869		Capital stock
Capital surplus	¥ 54,639	—	¥ 195	¥ 54,835		Capital surplus
Retained earnings	¥297,754	—	¥(13,526)	¥284,228	M, N	Retained earnings
Treasury stock	¥ (1,741)	—	—	¥ (1,741)		Treasury stock
Total accumulated other comprehensive income	¥ 551	—	¥ 21,683	¥ 22,235	L, M	Other components of equity
	¥399,074	—	¥ 8,353	¥407,427		Total equity attributable to owners of the parent
Noncontrolling interests	¥ 2,431	—	¥ 132	¥ 2,564		Noncontrolling interests
Total net assets	¥401,505	—	¥ 8,485	¥409,991		Total equity
Total liabilities and net assets	¥629,417	¥ (1,875)	¥ 24,388	¥651,929		Total liabilities and equity

Reconciliation of profit or loss and comprehensive income for the fiscal year ended March 31, 2019

Accounts under Japanese GAAP	Millions of yen				Notes	Accounts under IFRS
	Japanese GAAP	Reclassifications	Differences in recognition and measurement	IFRS		
Net sales	¥ 425,013	¥ (397)	¥ 493	¥ 425,109		Revenue
Cost of sales	¥(281,458)	¥(1,193)	¥(2,356)	¥(285,007)	E	Cost of sales
Gross profit	¥ 143,555	¥(1,591)	¥(1,862)	¥ 140,101		Gross profit
Selling, general and administrative expenses	¥ (85,169)	¥ 322	¥ 250	¥ (84,597)		Selling, general and administrative expenses
	—	¥ 139	¥ 358	¥ 497	Q	Share of profit of investments accounted for using the equity method
	—	¥ 2,080	¥ (90)	¥ 1,989	Q	Other income
	—	¥(2,669)	¥ (0)	¥ (2,670)	Q	Other expenses
Operating income	¥ 58,385	¥(1,718)	¥(1,344)	¥ 55,321		Operating profit
Non-operating income	¥ 4,294	¥ 1,201	¥(2,143)	¥ 3,351	B, J, Q	Finance income
Non-operating expenses	¥ (3,421)	¥ 260	¥ 1,136	¥ (2,023)	B,Q	Finance expenses
Extraordinary income	¥ 1,314	¥(1,314)	—	—	Q	
Extraordinary loss	¥ (1,530)	¥ 1,530	—	—	Q	
Profit before income taxes	¥ 59,042	¥ (41)	¥(2,351)	¥ 56,649		Profit before income taxes
Income taxes — current	¥ (16,613)	¥ 542	¥ 244	¥ (15,826)		Income tax expenses
Income taxes — deferred	¥ 501	¥ (501)	—	—		
Profit	¥ 42,930	—	¥(2,106)	¥ 40,823	E, G, J, K	Profit
Other comprehensive income						Other comprehensive income
						Items that will not be reclassified to profit or loss
Valuation differences on available-for-sale securities	¥ (6,321)	—	¥ 726	¥ (5,594)		Financial assets measured at fair value through other comprehensive income
Remeasurements of defined benefit plans	¥ (1,025)	—	¥ 244	¥ (781)		Remeasurements of defined benefit plans
	—	¥ (12)	¥ (8)	¥ (20)		Share of other comprehensive income of investments accounted for using the equity method
						Items that may be reclassified subsequently to profit or loss
Foreign currency translation adjustments	¥ (3,299)	—	¥ 47	¥ (3,252)		Exchange differences on translation of foreign operations
Share of other comprehensive income of associates accounted for using the equity method	¥ (80)	¥ 12	¥ 13	¥ (54)		Share of other comprehensive income of investments accounted for using the equity method
Total other comprehensive income	¥ (10,727)	—	¥1,024	¥ (9,702)		Total other comprehensive income (after tax effects)
Comprehensive income	¥ 32,202	—	¥(1,081)	¥ 31,120		Total comprehensive income

Notes on reconciliation as of the date of transition (April 1, 2018) and for the fiscal year ended March 31, 2019

A. Chargeable subcontracting transactions

The Group conducts transactions whereby components, etc. are provided with charge to suppliers for processing and subsequently repurchased at a gross price that includes processing and related costs (hereafter, “chargeable subcontracting transactions”). In a chargeable subcontracting transaction, under Japanese GAAP, extinguishment of the items supplied was recorded and accounts receivables were recognized at the time of provision to the supplier. Under IFRS, the transaction is a financial transaction in which extinguishment of the items supplied is not recognized, and the inventories of supplied items that remain with the suppliers at fiscal year end are recognized as financial liability. With respect to financial assets and financial liabilities associated with chargeable subcontracting transactions, under Japanese GAAP, the total amounts were presented for transactions that would be settled on a net basis, under IFRS, in instances where the Group has a legally enforceable right to set off the balance or has the intention to settle on a net basis or realize the asset and settle the liability simultaneously, the financial assets and financial liabilities are set off and the net amount is presented in the consolidated statement of financial position.

As a result, at the date of transition, “Trade and other receivables” decreased by ¥2,458 million and “Inventories” increased by ¥2,458 million. As of March 31, 2019, “Trade and other receivables” decreased by ¥2,449 million and “Inventories” increased by ¥2,449 million.

B. Interest rate and currency swaps

Under Japanese GAAP, interest rate and currency swaps that met certain hedging criteria for integrated treatment (special treatment of interest rate swaps and allocation treatment of currency swaps) were measured in their entirety. However, as such treatment is not allowed under IFRS, they are translated using the fiscal year-end rates applicable to foreign currency-denominated borrowings being hedged. Interest rate and currency swaps are measured at fair value through profit or loss.

As a result, at the date of transition, “Other financial assets” in current assets increased by ¥446 million, “Bonds and borrowings” in current liabilities decreased by ¥262 million, “Bonds and borrowings” in noncurrent liabilities decreased by ¥2,649 million, and “Other financial liabilities” in noncurrent liabilities increased by ¥3,286 million.

As of March 31, 2019, “Bonds and borrowings” in current liabilities decreased by ¥1,036 million, “Bonds and borrowings” in noncurrent liabilities decreased by ¥692 million, “Other financial liabilities” in noncurrent liabilities increased by ¥1,614 million, and “Finance income” and “Finance expenses” decreased by ¥1,183 million and ¥1,225 million, respectively.

C. Leases as lessee

Under Japanese GAAP, a lease in a transaction as lessee was classified as either finance lease or operating lease, and an operating lease was accounted for in the same manner as an ordinary lease transaction. Under IFRS, lease is no longer classified as finance or operating leases. Instead, a lease transaction in lessee accounting is accounted for both as right-of-use asset (lease asset) and lease liability (lease obligation). Adjustment for the relevant prepaid lease payments is made in measuring a right-of-use asset (lease asset).

As a result, at the date of transition, “Other current assets” increased by ¥507 million, “Right-of-use assets” increased by ¥7,190 million, “Other noncurrent assets” increased by ¥1,140 million, “Other financial liabilities” in current liabilities increased by ¥2,053 million, and “Other financial liabilities” in noncurrent liabilities increased by ¥6,785 million.

As of March 31, 2019, “Other current assets,” “Right-of-use assets,” “Other noncurrent assets,” “Other financial liabilities” in current liabilities and “Other financial liabilities” in noncurrent liabilities increased by ¥512 million, ¥8,193 million, ¥683 million, ¥2,173 million, and ¥7,323 million, respectively.

D. Reversal of impairment losses

Under Japanese GAAP, reversal of impairment losses is not allowed. Under IFRS, an impairment loss recognized in prior years shall be reversed if it is assessed that profitability has recovered.

With respect to some items of property, plant and equipment for which impairment losses were recognized in prior years due to not being utilized or other reasons, reversal of impairment losses was recognized at the date of transition given improved operation through use in other businesses, etc.

As a result, “Property, plant and equipment” increased by ¥9,859 million at the date of transition, and by ¥9,450 million as of March 31, 2019.

E. Recognition of impairment losses

Under Japanese GAAP, where there is an indication of impairment, the carrying amount of an asset or cash-generating unit is compared with the sum of undiscounted estimated future cash flows, and if and only if the sum of estimated undiscounted future cash flows falls below the carrying amount, an impairment loss is recognized to the extent of the recoverable amount based on the sum of the discounted estimated future cash flows. Under IFRS, if an indication of impairment exists, the carrying amount of an asset or cash-generating unit is compared with the recoverable amount that is based on the sum of discounted future cash flows, and if the recoverable amount is less than the carrying amount, an impairment loss is recognized to the extent of the recoverable amount. This resulted in the need to recognize impairment under IFRS with respect to some items of property, plant and equipment for which impairment indicators existed in the fiscal year ended March 31, 2019 but impairment was assessed to be unnecessary under Japanese GAAP. Accordingly, a reduction was made to the carrying amounts of the relevant items of property, plant and equipment as of March 31, 2019.

As a result, “Property, plant and equipment” decreased by ¥1,675 million, “Cost of sales” increased by ¥1,675 million, and “Profit” decreased by ¥1,675 million as of March 31, 2019.

F. Deemed cost

The Group has decided to apply the exemption provided in IFRS 1 and measured certain items of property, plant and equipment at fair value at the date of transition, and recognized the same as deemed cost. The carrying amount under Japanese GAAP of the items of property, plant and equipment for which the deemed cost was used, and their fair value, were ¥149 million and ¥1,370 million, respectively.

As a result, at the date of transition, “Property, plant and equipment” increased by ¥1,220 million, and the difference arising from the reconciliation is included in “retained earnings.” As of March 31, 2019, “Property, plant and equipment” increased by ¥1,238 million.

G. Goodwill

Under Japanese GAAP, goodwill was amortized on a straight-line method over the period in which the economic benefits of the goodwill were reasonably expected to be realized. Under IFRS, goodwill arising from business combinations is not amortized and impairment tests are performed periodically.

As a result, “Goodwill and intangible assets” increased by ¥251 million, “Investments accounted for using the equity method” increased by ¥350 million, and “Profit” increased by ¥601 million as of March 31, 2019.

H. Intangible assets (or development expenses)

Some items of development expenses that were expensed under Japanese GAAP are recognized as “Intangible assets” under IFRS, as they meet the requirements of “intangible assets” stipulated in IAS 38.

As a result, “Goodwill and intangible assets” at the date of transition and at March 31, 2019 increased by ¥1,836 million and ¥1,996 million, respectively.

I. Deferred tax assets and deferred tax liabilities

Under Japanese GAAP, deferred tax assets relating to unrealized gains from intra-group inventory transactions were calculated using the effective tax rates of the selling entity. Under IFRS, these are calculated using the effective tax rates of the acquiring entity. Furthermore, deferred tax assets and deferred tax liabilities are recognized for temporary differences arising from reconciliation of the differences in connection with transition to IFRS.

As a result, at the date of transition, “Deferred tax assets” and “Deferred tax liabilities” increased by ¥1,627 million and ¥2,017 million, respectively.

As of March 31, 2019, “Deferred tax assets” and “Deferred tax liabilities” increased by ¥1,242 million and ¥1,825 million, respectively.

J. Equity instruments

Under Japanese GAAP, non-marketable equity instruments were recognized at their acquisition costs. Under IFRS, in accordance with IFRS 9 “Financial instruments,” these instruments are classified as equity instruments measured at fair value through other comprehensive income and measured at fair value irrespective of their marketability. Under Japanese GAAP, gains and losses on sale of equity instruments were recognized in profit or loss. Under IFRS, for equity instruments that the Group has designated as financial instruments measured at fair value through other comprehensive income, changes in the fair value are recognized in “other comprehensive income.”

As a result, “Other financial assets” in noncurrent assets increased by ¥762 million at the date of transition.

As of March 31, 2019, “Other financial assets” in noncurrent assets increased by ¥851 million, while “Finance income” and “Profit” decreased by ¥960 million and ¥664 million, respectively.

K. Paid leave payable

Japanese GAAP has no specific requirements for accounting treatment of unused paid leave and special leave that are granted based on the years of service. Under IFRS, this is recognized as a liability.

As a result, at the date of transition, “Other current liabilities” and “Other noncurrent liabilities” increased by ¥4,437 million and ¥2,083 million, respectively.

As of March 31, 2019, “Other current liabilities” and “Other noncurrent liabilities” increased by ¥4,875 million and ¥2,142 million, respectively, and “Profit” decreased by ¥343 million.

L. Post-employment benefits

Under Japanese GAAP, service costs, interest expense and expected return on plan assets associated with post-employment benefits under the defined benefit plans were recognized in profit or loss. Furthermore, actuarial differences arising from the plans and the portion of past service costs that was not expensed were recognized in accumulated other comprehensive income and subsequently recognized in profit or loss over a certain period.

Under IFRS, current service costs and past service costs associated with post-employment benefits under the defined benefit plans are recognized in profit or loss. Net interest expense is recognized in profit or loss in the amount obtained by multiplying the net defined benefit asset (liability) by a discount rate. Remeasurement of net defined benefit liability (asset) is recognized in other comprehensive income, and is transferred from other components of equity directly to retained earnings when incurred without being recognized in profit or loss. This remeasurement comprises actuarial gains and losses related to defined benefit obligations and return on plan assets (exclusive of interest income).

Because there are variances in actuarial assumptions used including discount rates, etc. between Japanese GAAP and IFRS, actuarial valuation was conducted in accordance with the provisions of IAS 19, and adjustments were made to net defined benefit liabilities and assets.

As a result, losses of ¥3,273 million and ¥4,293 million were transferred from accumulated other comprehensive income to “Retained earnings” at the date of transition and March 31, 2019, respectively. “Net defined benefit liability” decreased by ¥2,399 million and ¥3,054 million at the date of transition and March 31, 2019, respectively.

M. Exchange differences on translation of foreign operations

In adopting IFRS, the Group applied exemptions as provided in IFRS 1 with respect to cumulative exchange differences on translation of foreign operations, and decided to deem these differences to be zero as of the date of transition, which are recognized in retained earnings.

As a result, at the date of transition, the entire amount of losses in foreign currency translation adjustments of ¥16,737 million was transferred from accumulated other comprehensive income to “Retained earnings.”

N. Adjustments to retained earnings

The effect on retained earnings arising from the adjustments described above is as follows (figures in parentheses indicate losses).

	Millions of yen	
	Date of transition (April 1, 2018)	2019
Reversal of impairment losses (see Note D)	¥8,684	¥8,400
Recognition of impairment losses (see Note E)	—	(1,675)
Deemed cost (see Note F)	1,220	1,184
Goodwill (see Note G)	—	601
Intangible assets (or development expenses) (see Note H)	1,274	1,385
Paid leave payable (see Note K)	(4,594)	(4,938)
Post-employment benefits (see Note L)	(1,540)	(2,077)
Exchange differences on translation of foreign operations (See Note M)	(16,737)	(16,737)
Other	407	331
Adjustments to retained earnings	¥(11,285)	¥(13,526)

Reclassifications in the consolidated statement of financial position

The main reclassifications made to comply with IFRS provisions are as follows.

O. Under Japanese GAAP, short-term investments maturing within 3 months from the date of acquisition were included in “Short-term investment securities.” Under IFRS, these are included in “Cash and cash equivalents.”

P. Other financial assets and other financial liabilities are presented separately.

Reclassifications in the consolidated statement of profit or loss

The main reclassifications made to comply with IFRS provisions are as follows.

Q. For income and expense items presented under Japanese GAAP as “Non-operating income,” “Non-operating expenses,” “Extraordinary income” and “Extraordinary expenses,” under IFRS, those related to finance are presented as “Finance income” or “Finance expenses,” and all other items are included in “Other income” or “Other expenses.” Under Japanese GAAP, “Share of the profit of investments accounted for using the equity method” is presented as “Non-operating income.” Under IFRS, this is separately stated and included in operating income.

Reconciliation of the consolidated statement of cash flows for the year ended March 31, 2019

The differences between the consolidated statement disclosed under Japanese GAAP and that disclosed under IFRS are mainly attributable to the adoption of IFRS 16 “Leases,” which resulted in adjustment of lease payments for operating leases. This item, which was included in cash flow from operating activities under Japanese GAAP, has been included in cash flows from financing activities as cash outflow for repayment of lease liabilities under IFRS.



Independent auditor's report

To the Board of Directors of NGK SPARK PLUG CO., LTD.:

Opinion

We have audited the accompanying consolidated financial statements of NGK SPARK PLUG CO., LTD. and its consolidated subsidiaries (collectively referred to as "the Group"), which comprise the consolidated statement of financial position as at March 31, 2020, and the consolidated statements of profit or loss, comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at March 31, 2020, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in Japan. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Japan, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Corporate auditors and the board of corporate auditors for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern in accordance with IFRS and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Corporate auditors and the board of corporate auditors are responsible for overseeing the directors' performance of their duties including the design, implementation and maintenance of the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with auditing standards generally accepted in Japan will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of our audit in accordance with auditing standards generally accepted in Japan, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, while the objective of the audit is not to express an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate whether the presentation and disclosures in the consolidated financial statements are in accordance with IFRS, the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with corporate auditors and the board of corporate auditors regarding, among other matters, the planned scope and timing of the audit, significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide corporate auditors and the board of corporate auditors with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Convenience Translation

The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended March 31, 2020 are presented solely for convenience. Our audit also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the basis described in Note 2(3) to the consolidated financial statements.

Interest required to be disclosed by the Certified Public Accountants Act of Japan

We do not have any interest in the Group which is required to be disclosed pursuant to the provisions of the Certified Public Accountants Act of Japan.

Hisashi Ohkita
Designated Engagement Partner
Certified Public Accountant

Akihisa Jijiwa
Designated Engagement Partner
Certified Public Accountant

KPMG AZSA LLC
Nagoya Office, Japan
August 7, 2020

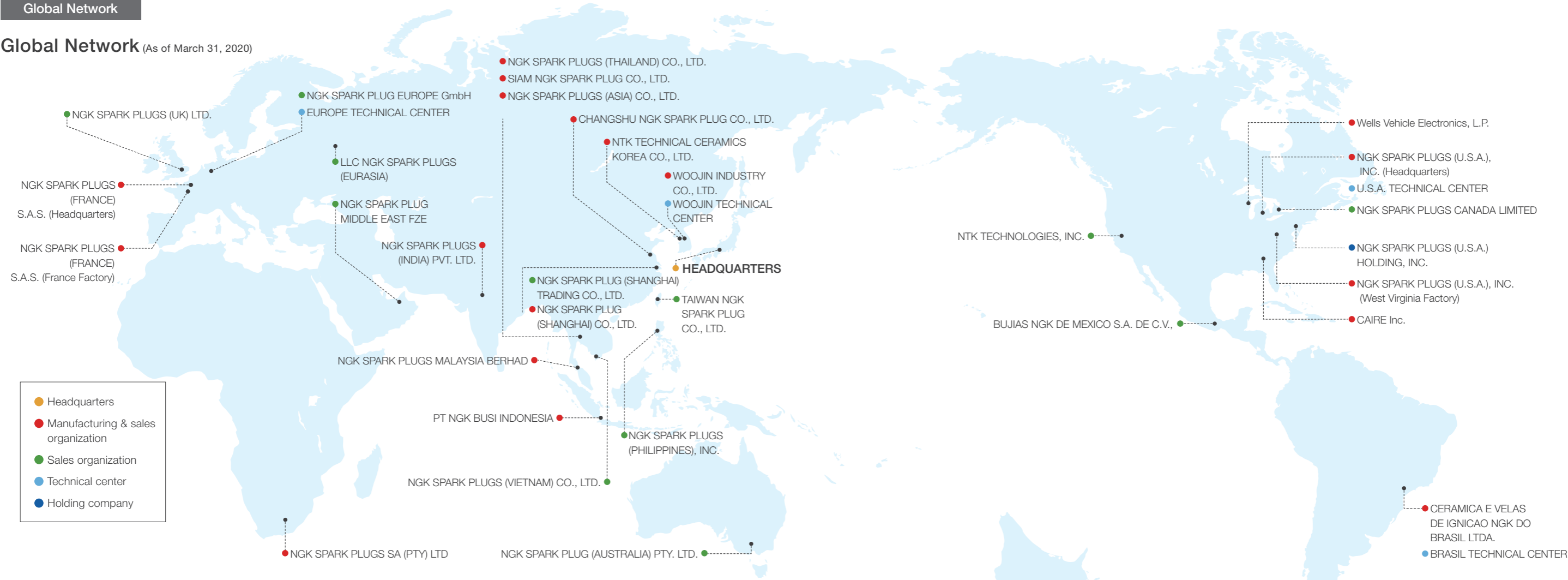
Notes to the Reader of Independent Auditor's Report:

This is a copy of the Independent Auditor's Report and the original copies are kept separately by the Company and KPMG AZSA LLC.

Global Network

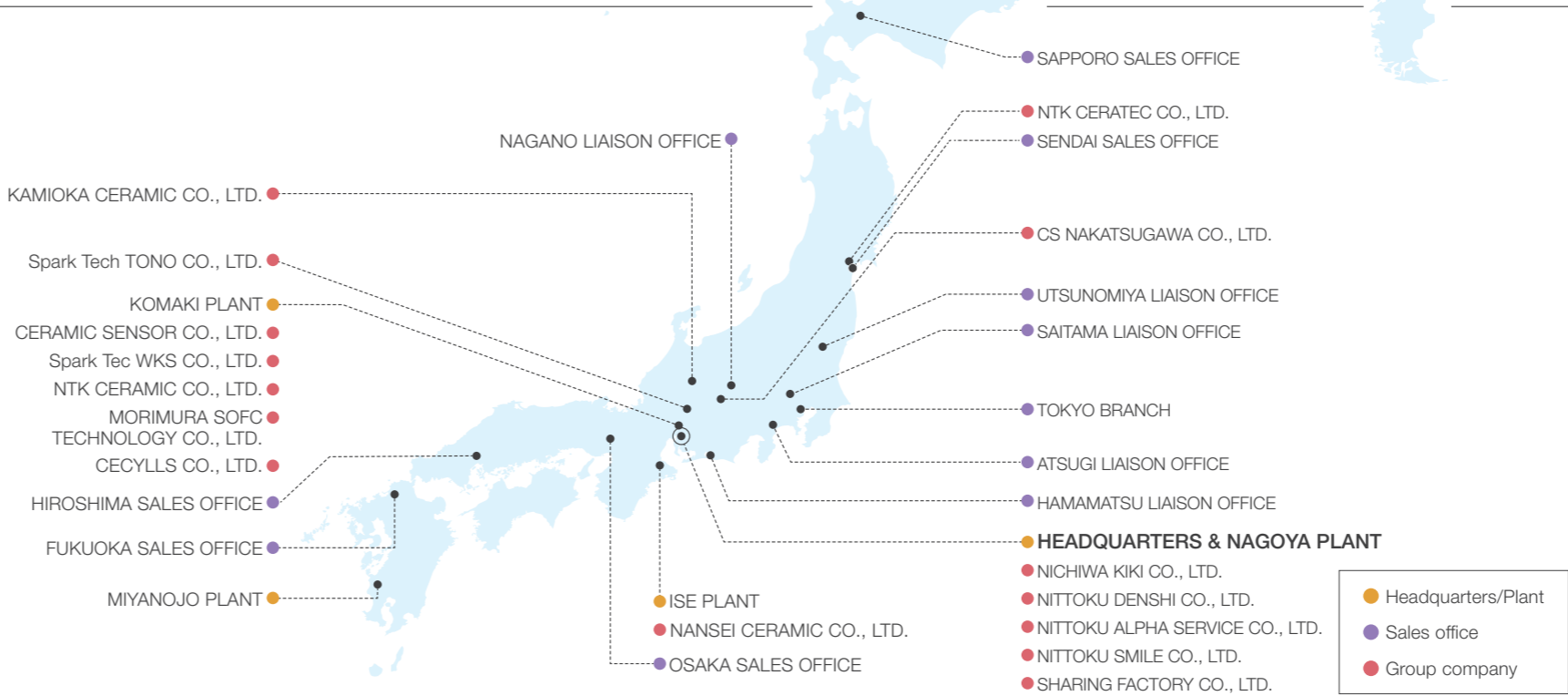
Global Network

Global Network (As of March 31, 2020)



Domestic Network

Domestic Network (As of March 31, 2020)



Corporate Profile and Stock Information / Independent Verification Report

Corporate data (As of March 31, 2020)

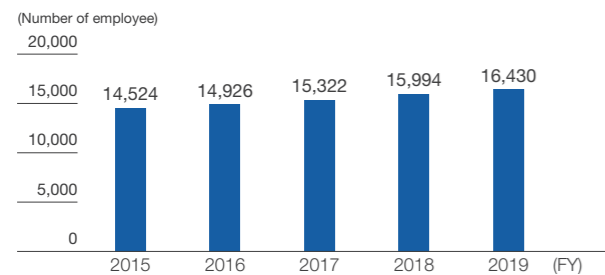
NGK SPARK PLUG CO., LTD.

Headquarters 14-18 Takatsuji-cho, Mizuho-ku, Nagoya 467-8525, Japan

Established October 1936

Number of employees Non-consolidated: 5,883 Consolidated: 16,430

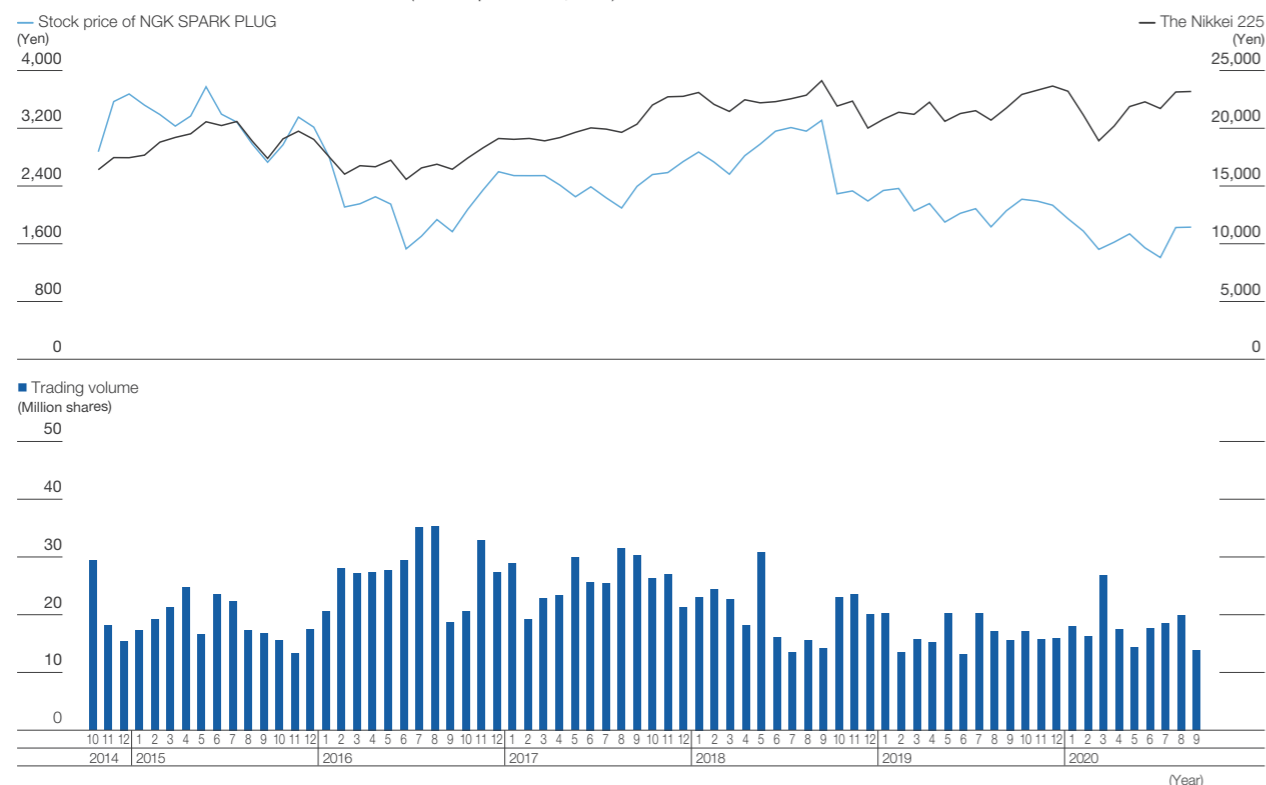
Number of employees at work (consolidated) (As of March 31, 2020)



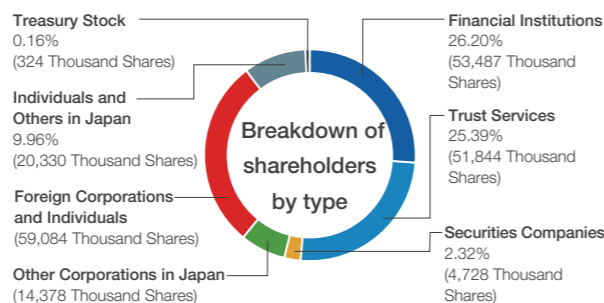
Number of shares and shareholders (As of March 31, 2020)

Paid-in capital	47,869 million yen
Total number of authorized shares	390,000,000
Total number of issued shares	204,175,320
Listed market	Tokyo Stock Exchange and Nagoya Stock Exchange (First Section)
Shareholder registry administrator	Mitsubishi UFJ Trust and Banking Corporation
Accounting auditor	KPMG AZSA LLC
Number of shareholders	17,484

Stock price and trading volume (As of September 30, 2020)



Breakdown of shareholders by type (As of March 31, 2020)



Major shareholders (As of March 31, 2020)

Name of shareholder	Number of shares held (thousand)	Ownership ratio (%)
Meiji Yasuda Life Insurance Company	16,794	8.23
The Dai-ichi Life Insurance Company, Limited	16,752	8.21
The Master Trust Bank of Japan, Ltd. (trust account)	16,298	7.99
Japan Trustee Services Bank, Ltd. (trust account)	8,136	3.99
National Mutual Insurance Federation of Agriculture Cooperatives	7,964	3.90
MUFG Bank, Ltd.	4,380	2.14
The Nomura Trust and Banking Co., Ltd. (investment trust account)	4,118	2.02
The Master Trust Bank of Japan, Ltd. (for Toyota Motor Corporation)	3,929	1.92
Japan Trustee Services Bank, Ltd. (trust account 9)	3,659	1.79
Nippon Life Insurance Company	3,563	1.74

Note: Ownership ratio above is calculated excluding treasury stock.

Independent Verification Report



No.1811003922

Independent Verification Report

To: NGK SPARK PLUG CO., LTD.

1. Objective and Scope

Japan Quality Assurance Organization (hereafter “JQA”) was engaged by NGK SPARK PLUG CO., LTD. (hereafter “the Company”) to provide an independent verification on “FY2019* CSR Data Calculation Report” (hereafter “the Report”). The content of our verification was to express our conclusion, based on our verification procedures, on whether the statement of information regarding GHG emissions, Energy consumption, Water consumption, Waste Amount, Lost Time Injury Frequency Rate (employees), Lost Time Injury Frequency Rate (temporary employees) and Occupational illness frequency rate (employees) in the Report was correctly measured and calculated, in accordance with the “Standard for Aggregating Rules of Environmental Performance Data (ESKW-027-1)”, “Standard for calculating the Injury frequency rate (ZESAF-001)” and “Standard for calculating the occupational illness frequency rate” (hereafter “the Rules”).

The purpose of the verification is to evaluate the Report objectively and to enhance the credibility of the Report.

*The fiscal year 2019 of the Company ended on March 31, 2020.

2. Procedures Performed

JQA conducted verification in accordance with “ISO 14064-3” for GHG Emissions and Energy consumption, and with “ISAE3000” for Water consumption, Waste Amount, Lost Time Injury Frequency Rate (employees), Lost Time Injury Frequency Rate (temporary employees) and Occupational illness frequency rate (employees), respectively. The scope of this verification assignment covers energy-derived CO2 emissions from Scope 1, 2 as GHG emissions, Energy consumption, Water consumption, Waste Amount, Lost Time Injury Frequency Rate (employees), Lost Time Injury Frequency Rate (temporary employees) and Occupational illness frequency rate (employees). The verification was conducted to a limited level of assurance and quantitative materiality was set at 5 percent each of the total emissions, total amount of Water consumption and frequency rates in the Report.

The organizational boundaries of this verification include the domestic and international Group sites (41 domestic sites and 26 international sites) on the Company and its group companies for GHG Emissions, Energy consumption, Water consumption and Waste Amount; and the Company only for Lost Time Injury Frequency Rates and Occupational illness frequency rate.

Our verification procedures included:

- Visiting three domestic sites: NGK SPARK PLUG CO., LTD. Komaki Plant, NTK CERAMIC CO., LTD. Komaki Plant and CS NAKASTUGAWA CO., LTD, selected by the Company.
- On-site assessment to check the report scope and boundaries; monitoring points of activity data; monitoring and calculation system; and activity data. The number and location of sampling sites for on-site assessment were selected by the Company.
- Visiting NGK SPARK PLUG CO., LTD. Komaki Plant for validation of the Rules and verification of Occupational illness frequency rate and Lost Time Injury Frequency Rate.

3. Conclusion

Based on the procedures described above, nothing has come to our attention that caused us to believe that the statement of the information regarding the Company’s FY2019 GHG emissions, Energy consumption, Water consumption, Waste Amount and Lost Time Injury Frequency Rates and Occupational illness frequency rate in the Report is not materially correct, or has not been prepared in accordance with the Rules.

4. Consideration

The Company was responsible for preparing the Report, and JQA’s responsibility was to conduct verification of GHG emissions, Energy consumption, Water consumption, Waste Amount, Lost Time Injury Frequency Rates and Occupational illness frequency rate in the Report only. There is no conflict of interest between the Company and JQA.

Sumio Asada, Board Director

For and on behalf of Japan Quality Assurance Organization

1-25, Kandasudacho, Chiyoda-ku, Tokyo, Japan

July 31, 2020