



IGNITE YOUR SPIRIT

NGK SPARK PLUG CO., LTD.

Integrated Report **2018**

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Editorial Policy
By proactively disclosing management plans, business results, CSR and environmental initiatives, and other information, NGK SPARK PLUG intends to foster an understanding of the company among all stakeholders and create opportunities for communication. As a means to achieve this objective, we issue the Integrated Report and CSR Report.

Scope and Period Covered
Period covered: The year ended March 31, 2018 (April 1, 2017 – March 31, 2018)
Some information pertaining to activities in the year ending March 31, 2019 is also included.
Scope: The NGK SPARK PLUG Group
Some information reported by NGK SPARK PLUG (non-consolidated) is also included.

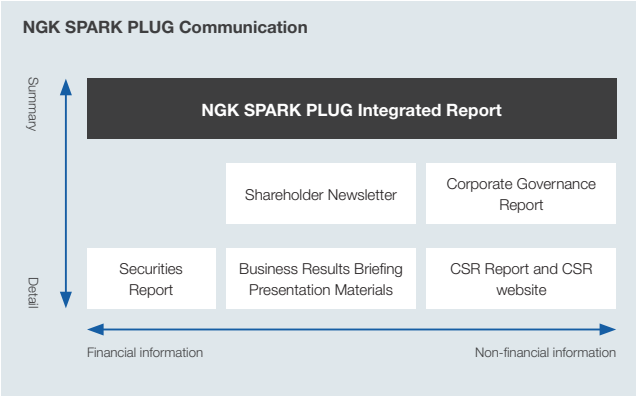
Guidelines for Reference
"The International Integrated Reporting Framework," the International Integrated Reporting Council (IIRC)
"Guidance for Integrated Corporate Disclosure and Company-Investor Dialogues for Collaborative Value Creation," the Ministry of Economy, Trade and Industry

Note Regarding Forward-looking Statements
This report contains forward-looking statements regarding the company's future plans, strategies, and business results. Please note that actual business results may differ from the expectations presented in this report.

This report is centered on particularly important financial and non-financial information. For detailed financial information, please refer to the Securities Report and Business Results Briefing Presentation Materials. In regard to the CSR Report and CSR website, detailed information on the company's initiatives is available on our website.



► <https://www.ngkntk.co.jp/english/>



Financial and Non-financial Highlights

NGK SPARK PLUG is a “highly profitable company.” An operating income ratio of 16.4% (year ended March 31, 2018) is a high level among companies in the automotive component industry. With a target of 20% for the year ending March 31, 2021, we will continue to be a highly profitable company.

Keyword for today's NGK SPARK PLUG

01

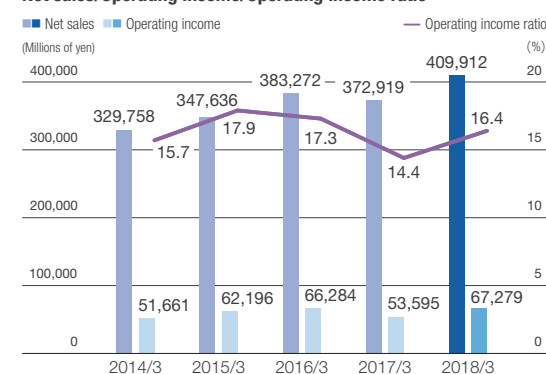
Operating income ratio

16.4%
Year ended March 31, 2018

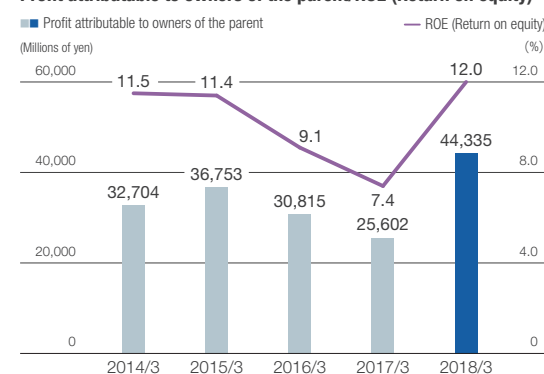
Financial Highlights

Performance

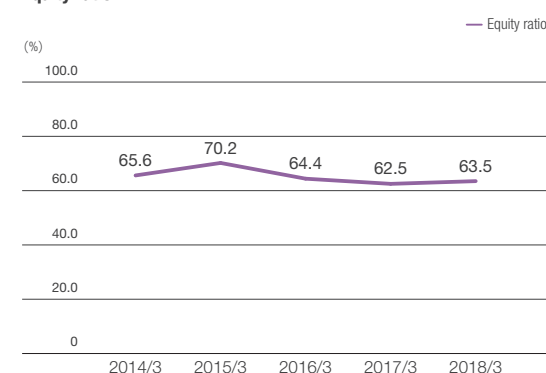
Net sales/Operating income/Operating income ratio



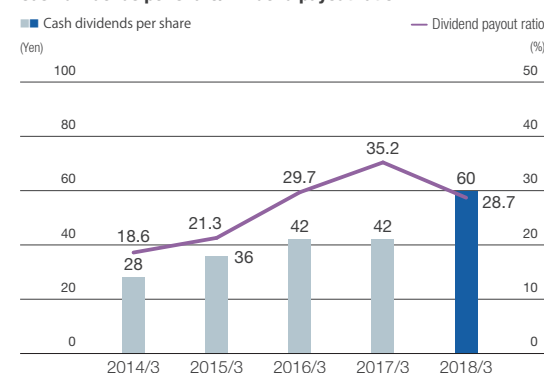
Profit attributable to owners of the parent/ROE (Return on equity)



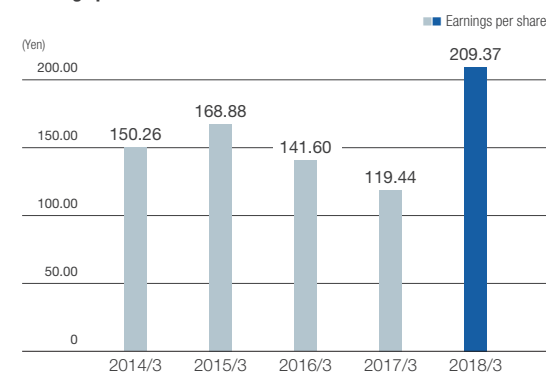
Equity ratio



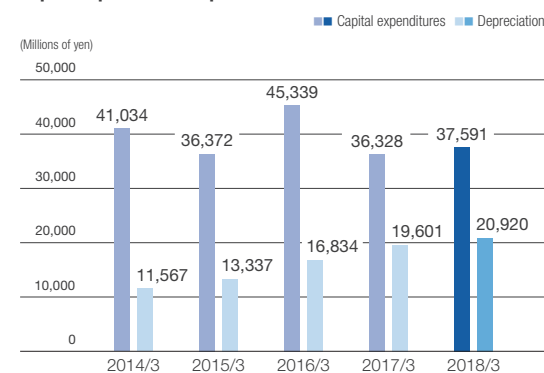
Cash dividends per share/Dividend payout ratio



Earnings per share

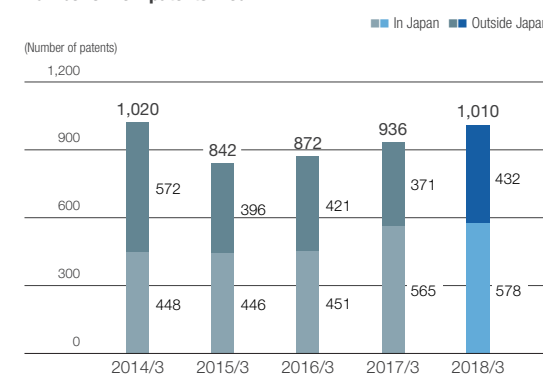


Capital expenditures/Depreciation

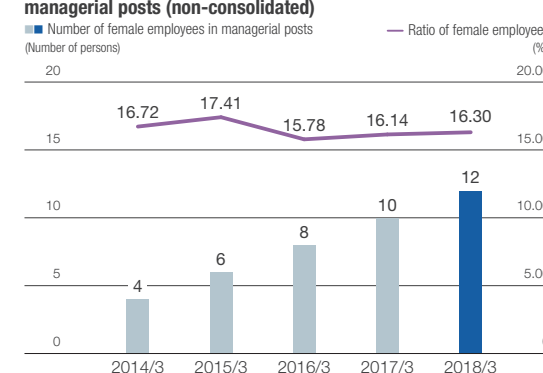


Non-financial Highlights

Number of new patents filed

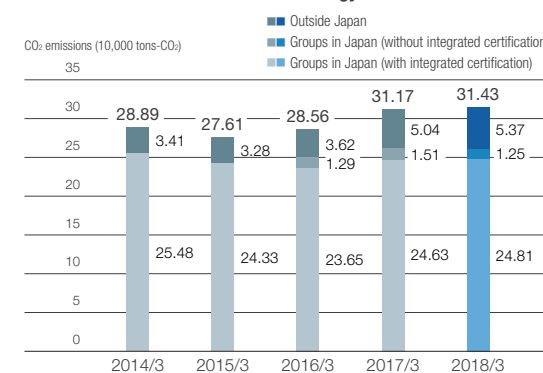


Ratio of female employees/Number of female employees in managerial posts (non-consolidated)



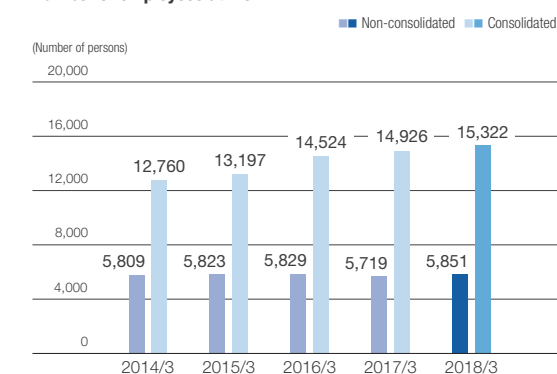
Data related to environment

Fluctuations in CO₂ emissions from energy use

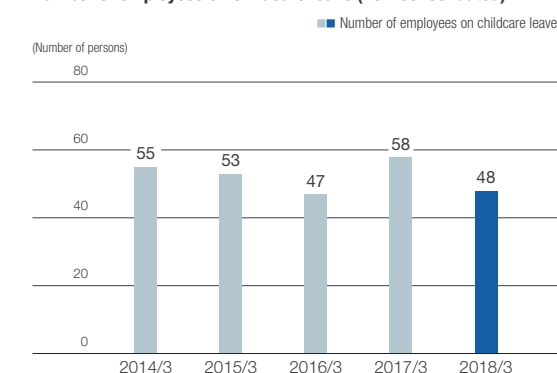


Data related to employees

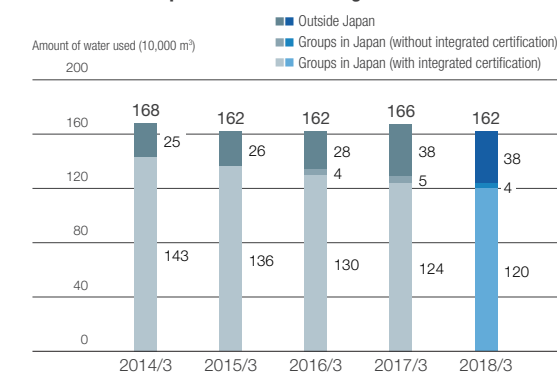
Number of employees at work



Number of employees on childcare leave (non-consolidated)



Fluctuations in tap water/well water usage



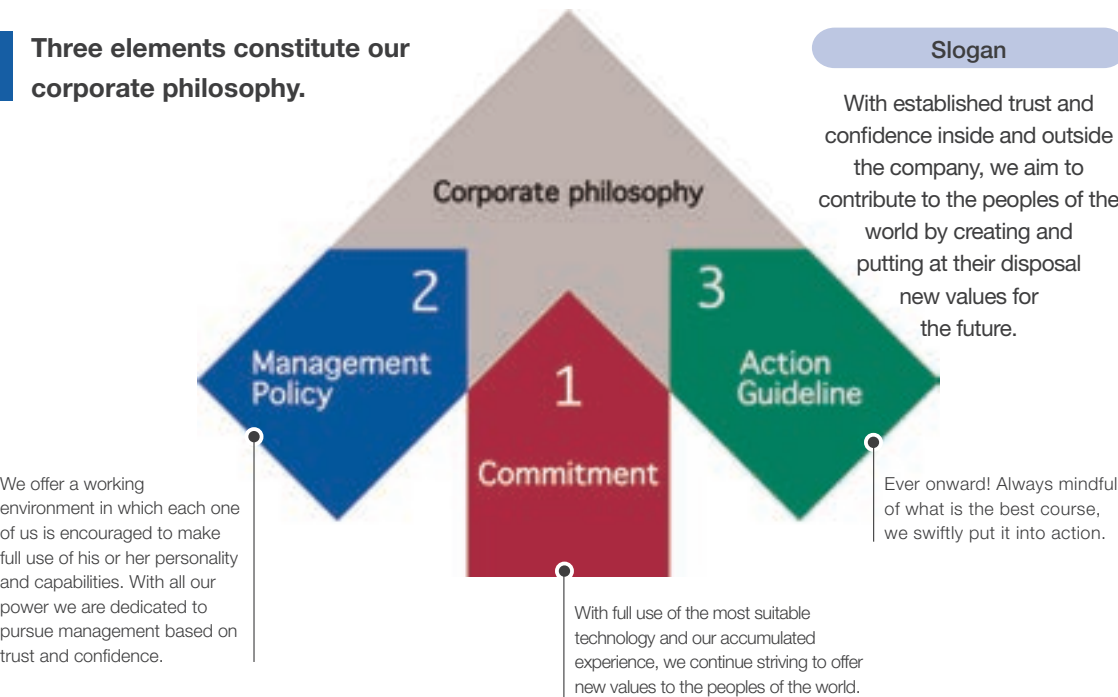
Corporate Philosophy and Long-term Management Plan

The “NITTOKU SHINKARON” is NGK SPARK PLUG’s long-term management plan. Through the 3-year phases of “Delving,” “Renovating,” and “Evolving,” we will seek 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. By 2020, we will strive to be a company that can offer “Real Value” to all our stakeholders.

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 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.



The Nittoku Way

The Nittoku Way refers to a set of philosophies that includes values that are shared by the entire NGK SPARK PLUG Group, and the actions based on these philosophies, as well as the manner in which those actions are carried out.

The Four Shared Values of the Nittoku Way

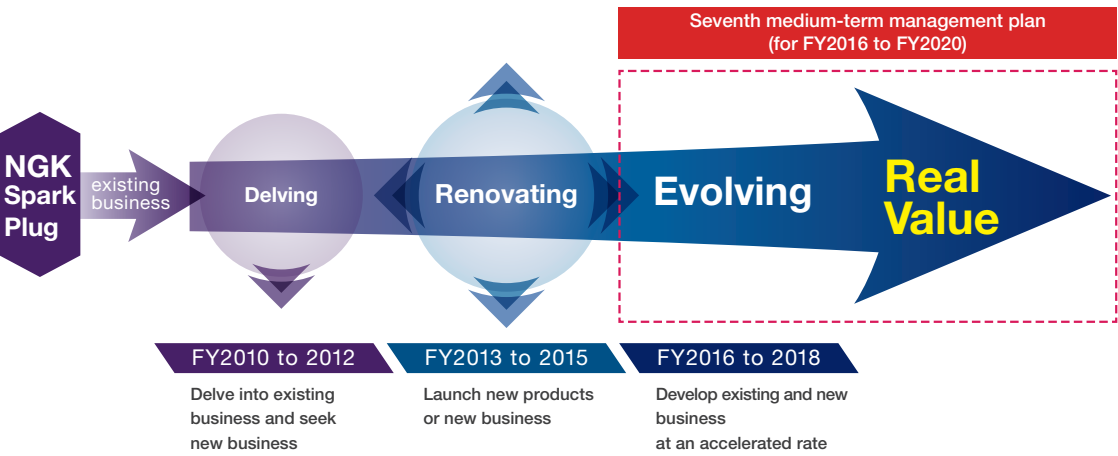
- Shisei-Shinjitsu: Sincerely, do our very best.
- Dokuritsu-Jiei: Believe in one's own ability, and take actions by oneself.
- Shikai-Keitei: Unite efforts with the people of the world, and utilize each other's differences.
- Soshi-Kantetsu: Have cherished desire, and carry it through till the end.



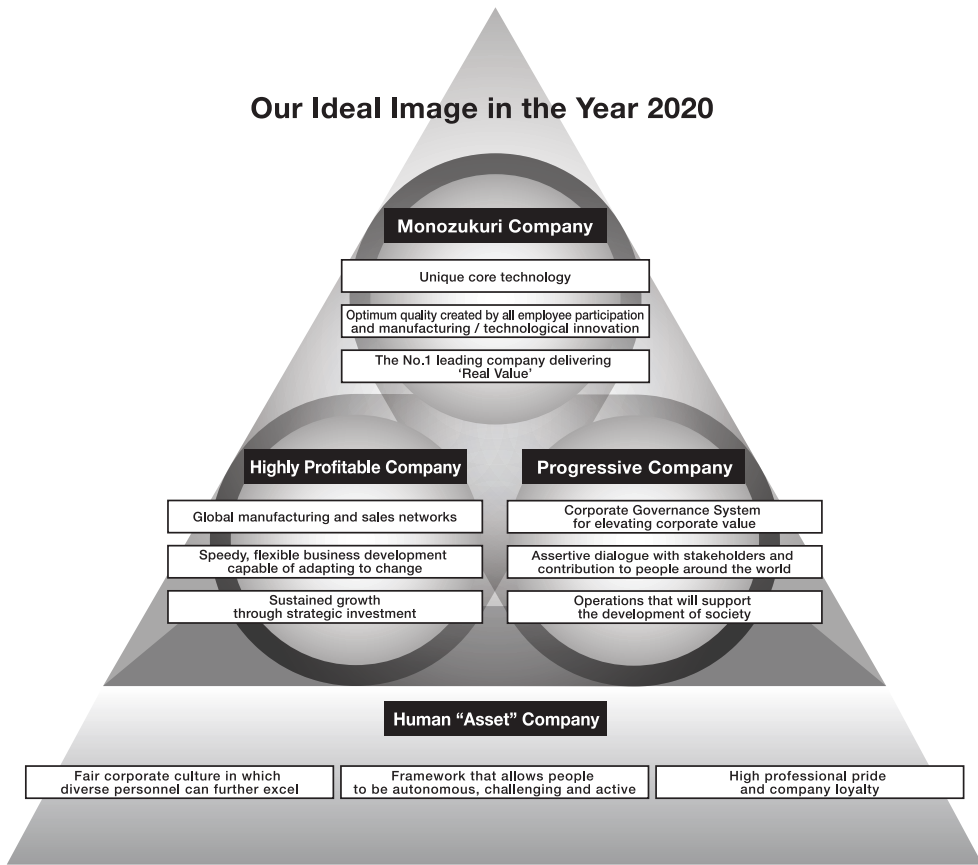
Keyword for today's NGK SPARK PLUG
02

NITTOKU SHINKARON

Long-term Management Plan: NITTOKU SHINKARON



Our Ideal Image in the Year 2020



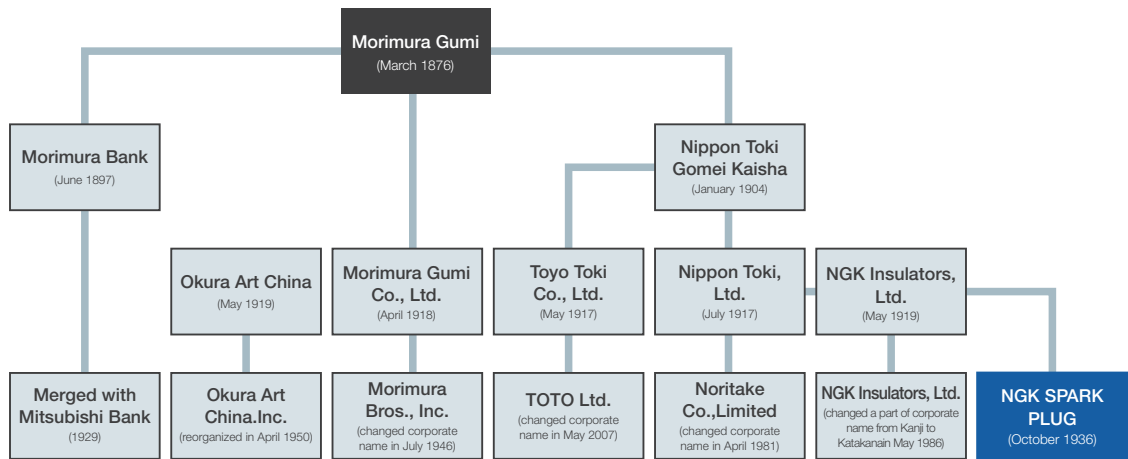
History of our Challenges and Creation of our Strengths

Our company has continued to challenge and evolve. Its roots can be traced to Morimura Gumi, founded by the forefather of the Morimura Group, Ichizaemon Morimura in 1876. On-time delivery of quality products at affordable prices. Morimura Gumi's DNA of a commitment to quality continues to flow through the veins of NGK SPARK PLUG to this day.

Keyword for today's NGK SPARK PLUG

03

Challenge



Origins of the Morimura Group



Established Ceramica e Velas de Ignicao NGK do Brasil Ltda.

1876 — Startup Period

The birth of NGK SPARK PLUG

The first spark plugs manufacturer in Japan.

NGK SPARK PLUG's history starts with Morimura Gumi, a corporate group whose name is synonymous with Japan's ceramic industry that was founded in 1876.

The founding brothers of Ichizaemon Morimura and Toyo Morimura were honest and passionate merchants. Determined to reclaim wealth which had flowed overseas, they embraced the challenge of foreign trade for the prosperity of Japan. On-time delivery of quality products at affordable prices. The sincerity of the Morimura Bros. Inc. was valued even in the foreign culture of the United States, building trusting relationships. The Morimura Bros. declined the help of the Meiji government and started a small

trade business based on their independent spirit, and their business gradually grew bigger. Eventually, Morimura Gumi began to manufacture ceramics and the Morimura Group was born.

NGK SPARK PLUG was established in 1936 as a spinoff from the Spark Plug Division of NGK Insulators. Our spark plug production began after a decision by Magoemon Ezoe, the first president of the company, that we would "produce plugs using our country's ceramics." Our plug manufacturing has since grown to cement a position as the No. 1 manufacturer of spark plugs in the world, and continues to evolve.

1876

Founding of Morimura Gumi



1930

Launched "NG Spark Plugs," the first spark plugs manufactured in Japan

1936

Founding of NGK SPARK PLUG



1937

Started manufacturing of NGK Spark Plugs



1950 — Growth Period

Establishing the NTK brand and expanding overseas

After postwar confusion had settled down and plug manufacturing stabilized, we embarked on development of technologies and products that made use of ceramics, in an effort to diversify our business. This marked the birth of the NTK brand. In the mid-1950s, using the development of ceramic products that served as the foundation of the "NTK brand," we moved into products in the areas of industry and environment. For example, piezoelectric ceramics utilize the active properties of ceramics to create voltage by applying pressure or sonic waves by applying voltage. Later, as a new type of ceramic, the NTK brand is currently used in a

wide range of applications not limited to plug-related products.

Furthermore, exports increased as Japan entered a period of rapid economic expansion. Using the 1959 establishment of our first overseas base of operations in Brazil as a starting point, we actively expanded overseas, creating a strong overseas network. As overseas sales grew, we provided plugs to the world's premiere motorcycle race, and that machine took the top position. Thanks to strong performance at races by machines fitted with our spark plugs, our brand became known worldwide.

1949

Started the manufacture of NTK technical ceramics



1958

Developed ceramic chip cutting tools



1959

Established Ceramica e Velas de Ignicao NGK do Brasil Ltda.

1967

Started the manufacture of IC packages



History of our Challenges and Creation of our Strengths

Keyword for today's NGK SPARK PLUG

03

Challenge



1960 — Establishment Period

Full-scale motorization of society and sensor development

The full-scale motorization of society arrived in the 1960s alongside the expansion of the Japanese economy. In 1967, the number of vehicles owned in Japan exceeded 10 million, and cars could be seen throughout the country. Meanwhile, environmental pollution such as air pollution became a social issue, and in 1968, the Air Pollution Control Act was passed in Japan. Administrative guidance was provided calling on countermeasures against exhaust gases. At the time, the United States and Japan were the only countries with such exhaust

gas regulations, but the movement eventually spread to other developed nations, and the regulations became increasingly strict with the passage of time. Amid such circumstances, we began development on various automotive sensors, including exhaust gas sensors, zirconia oxygen sensors, and wide range oxygen sensors. From then on, toward creating a sustainable environment, society, and economy, we have continued to create products in response to increasingly strict regulations.

1973

Started the manufacture of temperature sensors for automobiles



1982

Started the manufacture of oxygen sensors for automobiles



1985

Started the manufacture of glow plugs (ceramic type)

1990 — Development Period

Toward development of products for the next generation

To respond to energy and environmental issues for the next generation, we are accelerating development of high performance spark plugs and sensors, along with measures for a society powered by hydrogen energy.

In 2000, the automotive industry began development of fuel cell vehicles (FCV). We also began developing a “hydrogen leak detection sensor.” Through using sensor technologies from automotive oxygen sensors, we were successful in developing the industry’s first automotive thermal conductivity hydrogen sensor. The hydrogen leak detection sensor, which can accurately detect hydrogen leaks, has already been selected for use in the mass production of FCVs.

Additionally, we are also proactively developing solid oxide fuel cells (SOFC), and established the Fuel Cell Div. in 2016. We are focusing on the product that incorporates our core ceramic molding, printing, bonding and sintering technologies, and are fostering its R&D. Furthermore, we are also engaging in R&D in the medical field, with a view to contributing to the aging society.

We will continue to challenge ourselves in a variety of fields through the use of various technologies that can be derived from ceramics.

2006

Total number of domestic production of Spark Plugs reached 10 billion units

2005

Developed a hydroxyapatite cement

2007

Developed “1kW class solid oxide fuel cell power generation system”

2016

Started the sale of hydrogen leak detection sensors



NGK SPARK PLUG's Sales Structure

The company's ratio of sales outside Japan is 84%. Our business network spans 21 countries. We are actively working to expand our production and sales network into emerging markets by creating a production system optimized on a global scale.

Keyword for today's NGK SPARK PLUG

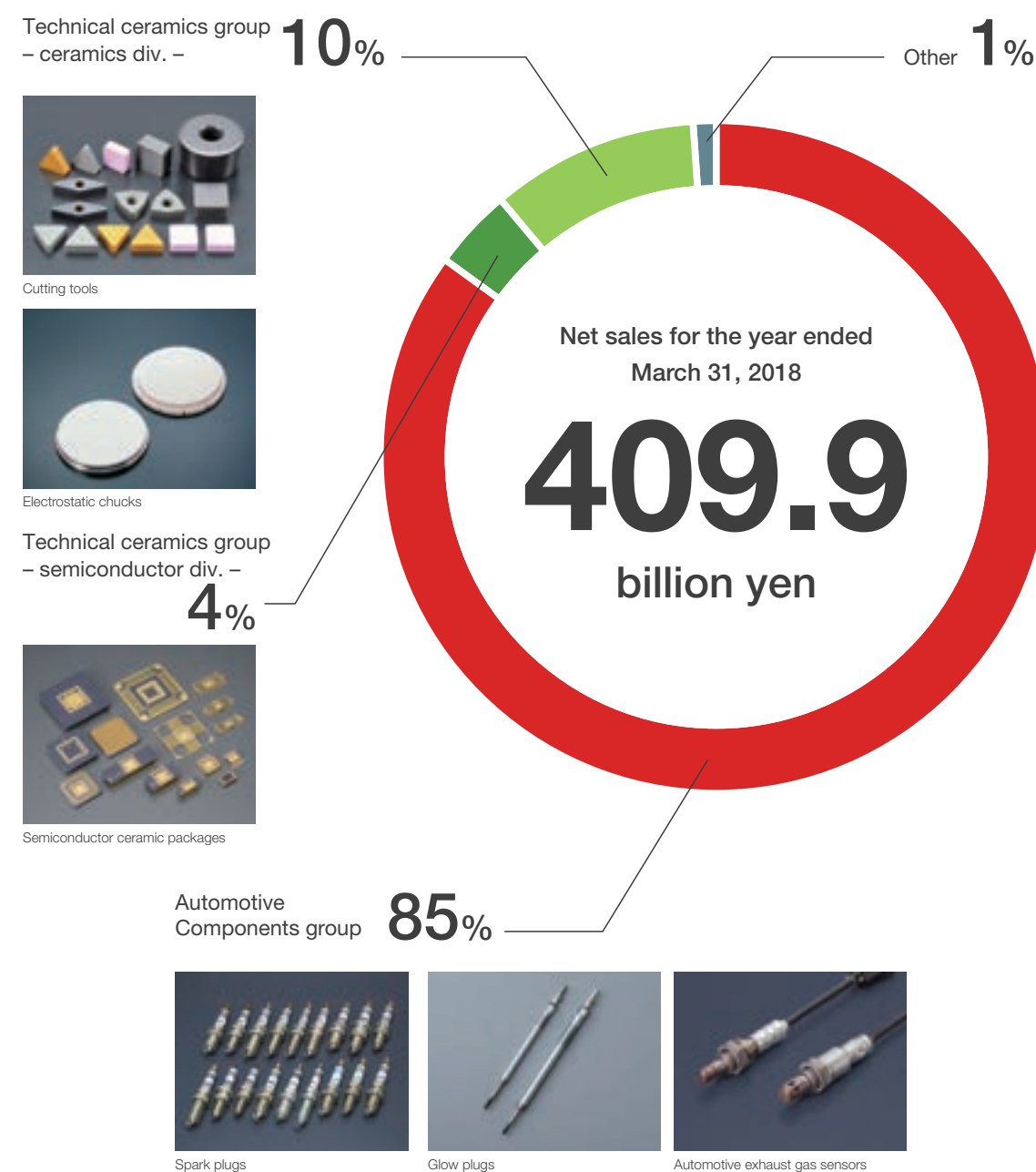
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Net sales outside Japan

84%

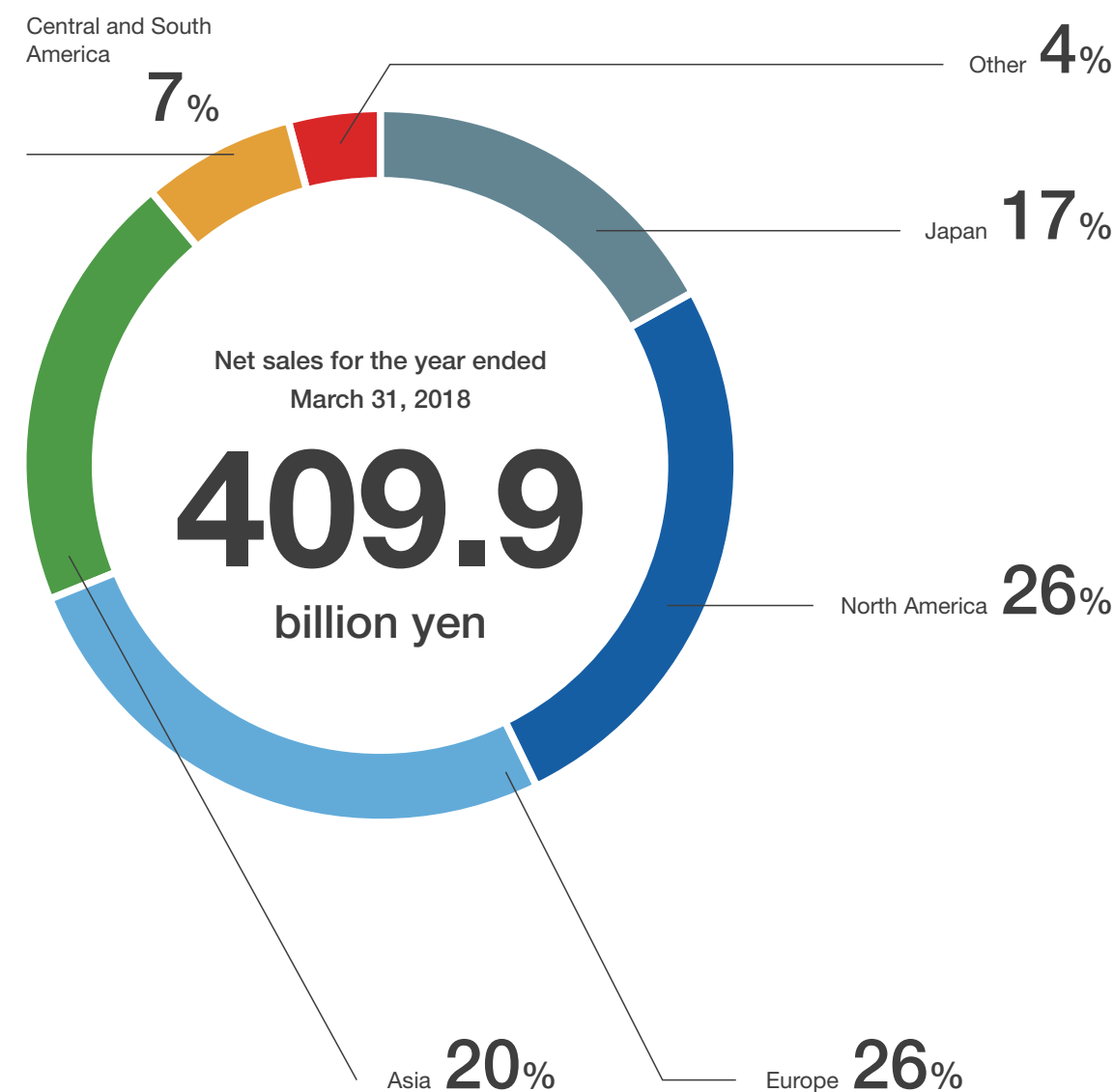
Consolidated net sales composition by business

The automotive components business, which is centered on spark plugs and automotive exhaust gas sensors, accounts for 80% or more of the company's sales. At present, we are focusing on creating new businesses, as we aim to diversify our portfolio of businesses over the long-term.



Consolidated net sales composition by region

The company operates businesses around the world. We are somewhat affected by foreign exchange rates, but we do not rely on any particular region, and therefore our risks are diversified.



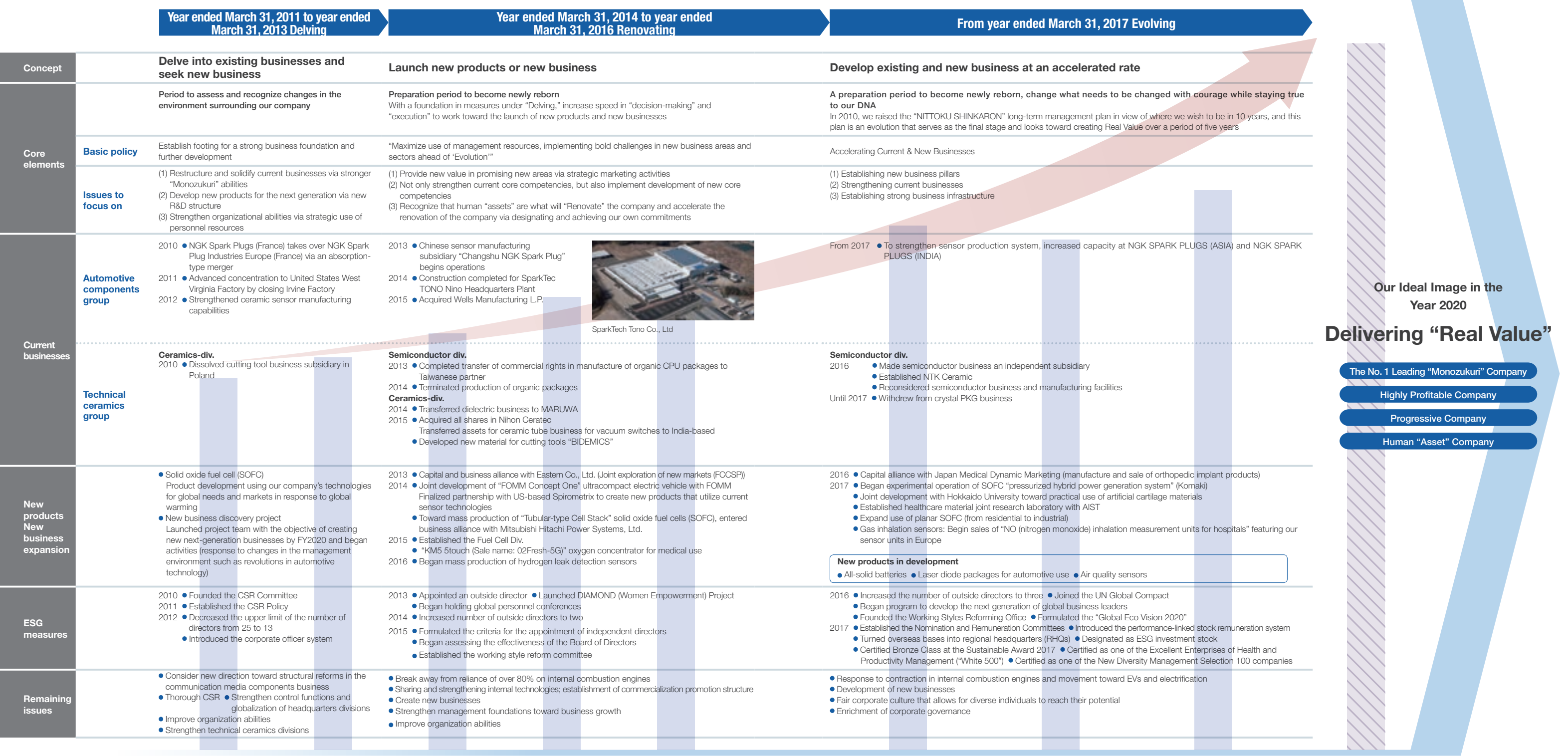
Past, Present, and Future Management Plans

The company is moving forward with its “three years of evolving” and the five years that look toward creating “Real Value” as its seventh medium-term management plan to serve as the final phase of “NITTOKU SHINKARON.” We are diligently working to provide real value through resolving management issues that were discovered through practice.



Real Value

Looking back on the Medium-term Management Plans



*The chart shows net sales.

CEO Message

Work to achieve the long-term management plan targets by maintaining our status as a highly profitable company

Shinichi Odo
Representative Director and Chairman of
the Board Chief Executive Officer
President Officer



“NITTOKU SHINKARON” Long-Term Management Plan Progress

Since the founding of NGK SPARK PLUG in 1936, we have established our raison d'être as offering new value to people around the world, utilizing our technical expertise in combining our core strength in ceramics with different materials, our development of quality products, and our technical expertise in mass-production. Our businesses have been developed in line with global economic expansion and the trend toward motorization. As targets for the year ending March 31, 2021,

the final year of our seventh medium-term management plan, have designated net sales of 520 billion yen and operating income of 100 billion yen, and we are continuing to endeavor to achieve these targets.

In the “NITTOKU SHINKARON,” a long-term management plan we formulated in 2010, we outlined our ideal images in the year 2020 as a “‘Monozukuri’ company,” a “highly profitable company,” a “progressive company,” and a “human ‘asset’ company.” We have divided our path to achieve this images into three steps: “delving,” where we delve into existing businesses and seek new businesses;

“renovating,” where we launch new products and new businesses; and “evolving,” where we develop existing and new businesses at an accelerated rate; and our aim has been to become a company that can ultimately deliver “Real Value” to all stakeholders.

At present, we are in the third step, “evolving.” In terms of our current state compared with our ideal images, with respect to becoming a “‘Monozukuri’ company,” we have maintained the top share of the global spark plugs market for many years, and have also acquired the top share in the temperature sensor market. In addition, we are also pursuing unique core technology and using it to create new products, including R&D on all-solid state batteries, which are very safe, using our proprietary technology. With respect to becoming a “highly profitable company,” our operating income ratio for the year ended March 31, 2018 was 16.4%, maintaining a high level among companies in the automotive components industry. We are targeting an operating income ratio of 20% by the year ending March 31, 2021, as we focus on management that prioritizes high profitability by reducing losses in the ceramic packaging business of the semiconductor-related business in line with plans and improving profitability for the Group as a whole. Regarding becoming a “progressive company,” in addition to aiming toward further expansion in current businesses, we will actively advance the creation of new businesses. Sales in the automotive components business are currently proceeding ahead of targets and still make up over 80% of the total, as the proportion of growth businesses, including new businesses, remains relatively low in terms of the balance of our business portfolio. There are many uncertainties related to new businesses and there are aspects that are difficult to control, but in view of potential ultra-long-term risks posed by the shift to electric vehicles and the spread of car sharing, we must create new business pillars. In addition, as the business environment changes, we shall also hasten to strengthen our management foundations to facilitate sustainable growth. With regard to being a “human ‘asset’ company,” we are engaged in diversity management and personnel reforms in the form of providing opportunities for women and the “platinum generation (aging workers)” via the Strategic Human Resources Department. We are fostering a corporate culture that treats our diverse human resources fairly, and enables them to work in a lively and active manner.

Summary of the Year Ended March 31, 2018: Promoting both the further strengthening of well-performing current businesses and creation of new businesses

Regarding recent business results, the automotive components business has been performing favorably overall due to the effect of the ongoing strong demand for spark plugs, glow plugs, and sensors not only in developed markets, but also in emerging markets such as China, India, and Thailand. In China in particular, sales have grown by more than 20% year on year, and there has also been a contribution to profits from factors such as the good reception to precious metal plugs and other value-added products in the repair parts market, and we have thus made progress with the issue of expanding sales in emerging markets.

Stricter environmental regulations around the world are contributing to increased demand in the sensor business, and we expect the number of units in use to continue increasing, mainly with regard to value-added products such as wide-range sensors that measure oxygen concentration in exhaust gas and sensors that detect NOx. Volumes of some sensors have decreased with the decline in sales of diesel-powered vehicles, but overall demand continues to trend upward, partly because of an offsetting increase from a shift to sales of gasoline-powered vehicles, and we shall respond to the demands of the market.

In our semiconductor package business, which remains an issue, we made it a business subsidiary in 2016, and have been diligently working by inviting management talent, reconsidering facilities, selecting and concentrating of products, and reduce fixed costs. As a result, for the year ended March 31, 2018, we were successful in reducing the amount of losses by about half compared to the previous year. We are making steady progress in line with our regeneration plan, and are focusing on achieving profitability over the full-year by the year ending March 31, 2020.

In addition, in regard to new businesses, we are focusing on developing and producing tubular and planar stacks in the fuel cell business, which was established as a division in 2016, in order to supply a full line-up of stacks for home use, commercial use, and industrial use. Looking ahead, there are plans for the installation of a pressurized hybrid power

“Evolving at an accelerated rate”

generation system (made by Mitsubishi Hitachi Power Systems, Ltd.) equipped with our Tubular-type Cell Stacks.

Correspond to business risks in a changing market

There is a possibility that the external environment of our company will change drastically in the future due to factors such as the spread of electric vehicles (EVs). Furthermore, PHVs (plug-in hybrid vehicles) run for longer periods solely on electrical power than HVs (hybrid vehicles), so we must also consider the possibility that spark plugs will last much longer. Looking ahead, it might be shrinking the repair parts business along with the spread of EVs and PHVs. We recognize these changes as significant risks that may affect our businesses, and we must adopt countermeasures from a long-term perspective. On a daily basis, I encourage our employees to face new challenges and take risks to create and foster new businesses.

Meanwhile, according to documents published this year by the International Energy Agency (IEA), against a backdrop of increasing automotive demand in emerging markets, the number of automobiles with internal combustion engines will continue to grow until 2050 in both the global number sold and number owned, commanding a large share of the overall automotive industry, even with the inclusion of EVs. This indicates a scenario where there will not be such a rapid shift toward EVs that do not require our mainstay products of spark plugs and sensors in the next 10 to 20 years. In particular, about 75% of the spark plugs our Group provides are used for repair purposes. Even after new cars are sold, spark plugs must be replaced for vehicles owned, so it is unlikely that this demand will fall drastically in a short span of time, and when viewed from the global market, the market is actually expected to grow at over 5% on an annual basis. As we hold a significant share of the global spark plug market at present, the NGK SPARK PLUG Group must continue to provide a stable supply to the market.

We must make some difficult decisions with regard to future demand forecasts, but we shall endeavor not to suffer significant opportunity losses in an optimistic scenario, and we also intend to establish new businesses that can secure profits even if a crisis occurs sooner than expected in a scenario unfavorable for the company, while carefully assessing capital expenditures and making bold decisions so as not to miss opportunities for investment in new businesses, and thereby addressing business risks that will significantly impact our management.

Preparing for business risks from game changers such as entry by the ICT industry into distribution

Not limited to EV risk, there are various risks surrounding our company's businesses over the medium- to long-term stemming from trends in the market, technology, and laws and regulations. One such risk that we have our eye on is the effect of progress in ICT (information and communications technology) on distribution for automotive components. Spark plugs for repair use are mainly sold in stores, etc., and we have built a strong distribution network. However, developments in ICT have caused revolutions in retail formats in many industries, and we are aware that we must implement some form of countermeasure in future, even in retail distribution for a BtoB company like us. First, we shall further utilize our distribution network to sell other automotive components in addition to spark plugs, such as ignition coils.

To further expand the automotive business, revise 'monozukuri'

Against a backdrop of stronger environmental regulations, there have been rapid improvements in vehicle fuel economy, reductions of CO₂ emissions, and downsizing of engines. As a result, not only must spark plugs maintain and improve a high level of ignitability, but their sizes must be adjusted to reduce their diameter and make them longer as well.

The insulator, which serves as the core of the spark plug, is like a piece of pottery that must be baked, and is a functional component that is very difficult to make thin, narrow and long. We are able to respond to trends in new engines and environmental regulations because we have expertise nurtured over many years from taking on the entire process of development and manufacturing from ceramic materials to the final product, including production technologies to stably produce quality functional components such as these. I believe that this "ceramic development ability" and "ceramic product mass production technical expertise" give NGK SPARK PLUG a competitive advantage.

However, there are issues that we must address in future in regard to production processes. In addition to continuously striving to improve performance and quality, we have also constantly improved productivity as well, but at present, full automation has not been achieved, and there are certain processes that require a human touch. In particular, with an older population and lower birthrate in Japan, a lack of personnel is an increasingly dire issue regardless of industry, and issues lie in the use of robotics in the manufacturing process and further

“Assess business risks and keep with the times,”



advancement of automation.

At the same time, another issue is the continuation of manufacturing technologies that have been fostered during our over 80 years in Monozukuri. Automation and systemization has advanced by leaps and bounds in the manufacturing process for ceramics products, and time required for baking has been reduced significantly. For example, we recently succeeded in reducing the time required for baking processes for insulators by one hour, but doing so required many years of steady testing. In this way, there are many aspects of ceramics that cannot be fully explained by logic alone, and aspects remain that are reliant on people's intuition and talent. In addition to handing down these technologies and abilities to the young generation, through the use of ICT, it will also be necessary to consider Monozukuri methods that do not rely on intuition and talent.

Semiconductor package business to move from "survival" to "winning"

We are implementing reforms in the semiconductor package business, where losses have continued for many years, as we aim to achieve profitability by the year ending March 31, 2020.

The company intends to continue operating the semiconductor package business. Value-added products such as wide-range sensors and planar fuel cell stacks have been created by using semiconductor package technology in a cross-departmental manner. We have been able to refine our core semiconductor package technologies precisely because we operate the semiconductor package business as a business rather than R&D, and have developed applications for products through varied trial and error under difficult circumstances. First, we aim to "survive" and achieve profitability, in order to continue operating this business.

On the other hand, it will be difficult to target business

development if, after profitability is achieved, the operating income ratio is only 2% to 3%. There is no room for growth investment, and we shall therefore soon consider strategies aimed at moving from "surviving" to "winning," to enable us to secure an appropriate operating income ratio to invest for "winning".

Improving efficiency for supply chain management on a global scale

NGK SPARK PLUG operates businesses on a global scale, and we recognize that reforms aimed at further strengthening supply chain management (SCM) are an important issue. With regard to our mainstay spark plugs products, they can be shipped in high densities via transport containers due to their small size. Accordingly, transportation expenses as a portion of overall costs have remained at a level that does not have a significant effect. However, logistics costs such as personnel expenses in warehousing operations are on the rise around the world. In response, for example, we invested several billion yen in Europe to focus on introducing robotics and automation in our logistics operations. In Japan, we also created a new logistics center three years ago and established a model method, which we have begun rolling out globally. In the future, we will accelerate such measures globally, and work toward the optimization of logistics.

Targets for the year ending March 31, 2019: Forecasts call for increased sales and profits on the back of strong performance from the automotive components business

Regarding business results forecasts for the year ending March 31, 2019, at present, we project that both net sales

and income will improve upon those achieved during the previous year. In addition to products such as spark plugs and sensors in the automotive components business continuing to be drivers, the technical ceramics business such as SPE business* will also contribute to results.

For the full year, we forecast that net sales will increase by 6.4% year on year to of 436.0 billion yen, operating income will increase by 7.0% year on year to 72.0 billion yen, ordinary income will increase by 8.5% year on year to 75.0 billion yen, and profit attributable to owners of the parent will increase by 18.4% year on year to 52.5 billion yen. For our plans for capital investment, we plan to invest 43.8 billion yen. By strengthening our abilities in each business, we believe that we can respond to strong demand.

We are targeting spark plugs production of approximately 1.0 billion units in the year ending March 31, 2021, and with our plans for significant capital expenditures in areas such as land and buildings largely solidified, we shall move to the implementation stage in a timely manner.

We will consider subsequent capital expenditures by keeping close watch on future demand projections.

* SPE = Semiconductor production equipment

Direction in new businesses: “Solving social issues” through our products

For our direction in new businesses, we have considered fields where we can utilize our strengths to tackle business opportunities, while remaining mindful of our contribution to future social issues. Specifically, we will advance initiatives in next-generation automobiles, the environment- and energy-related field, and the medical field.

First is the development of cell stacks that serve as the core component of solid oxide fuel cells (SOFC), which are expected to serve a vital role in a hydrogen society. Hope has been placed

in SOFCs as fuel cells for power generation that use ceramic solid electrolytes. As this field can make use of our specialty in ceramics technologies, we are currently focusing on product commercialization with the aim of becoming a comprehensive cell stack manufacturer including residential, commercial, and industrial use.

Additionally, we are also advancing development of elemental technologies regarding solid-state batteries, which are being looked at as next-generation batteries due to their high safety and performance. As their solid inorganic compounds are used as electrolyte material, we are advancing development that makes use of our ceramics technologies here as well. After about 10 years of R&D, component prototypes have been completed, and we are looking into future business expansion.

Meanwhile, in the medical field, we have developed techniques for ceramics in the form of sintered bone prosthetic materials, which are made by sintering materials incorporating the inorganic component of bones, and hardening-type bone prosthesis, which can fit to replace absent parts of the bones during surgery and harden in bodies afterward. Furthermore, we are also promoting development of new artificial bones that have features similar to natural bones as well as strengthening our businesses through initiatives such as a capital alliance in 2016 with Japan Medical Dynamic Marketing, INC., a reseller of medical devices. In future, we shall consider business development, including M&A, as we look toward expanding sales in Europe, United States, and other developed countries.

Establishing corporate culture essential for creating new businesses and personnel reforms aimed at sustainable growth

It is my belief that to create new businesses, changing our employees' mindset is essential. Our Group has established

a solid business model through spark plugs and sensors, and to our benefit, we have been able to expand our business through a chain of successes. But viewed from a different perspective, we are prone to becoming an organization that finds it difficult to foster a corporate culture that does not fear failure.

In the seven years that have passed since I became president, I have talked and explained about the importance of facing challenges and taking risks. Compared with when I was appointed as president, I can feel that the mindset of our employees has definitely begun to change. In addition, we have launched the “DNA Project,” which has the objective of creating businesses for 10 years in the future, and is centered on employees in their 20s and 30s. This project led to the creation of a new subsidiary in 2018. In addition, in order to encourage people to “face challenges” in the company, we began reforming our personnel structure four years ago, with the aim of renewing the evaluation system. At present, we are continuing with personnel reforms under the leadership of the Strategic Human Resources Department. We will work to create “transparency in personnel assets” on a global basis through initiatives such as creating a personnel asset database, while promoting the unified management of personnel assets, from acquisition to development to assignment.

In 2013, the Group launched the “DIAMOND Project,” and has been promoting the creation of a workplace where women can shine. Furthermore, in 2015, we also began work on “working style reforms” that revisit work-life balance on a companywide scale, not just for women. Although the DIAMOND Project has been successful in increasing the number of women in managerial positions by a factor of three since its launch five years ago, I feel that if the number increases by a factor of three again, it will be easier for women to envision a career and actively participate. In addition, we shall further promote diversity among management, in order to approach issues from a range of perspectives, and live up to the expectations of stakeholders.

Approach to governance

After introducing a corporate officer system in 2012, we have reduced the number of directors and currently have structure with ten directors including three outside directors and four audit & supervisory board members including two outside audit & supervisory board members. With a broad range of ideas exchanged at board meetings, I think that the Board of Directors is functioning well, and thanks to the introduction of the Nomination and Remuneration Committees, decisions are not made solely

by people like the CEO or COO, but through a framework in which persons in open environments both inside and outside of the company can understand. In addition, a performance-linked stock remuneration system has been introduced for executives since 2017 with the intent of heightening their motivation to contribute to improving business results and expanding our corporate value over the medium- to long-term. In regard to cross-shareholdings, we have been reducing our shareholdings on a yearly basis, and are considering further reducing our shareholdings in future.

NGK SPARK PLUG signed the UN Global Compact in November 2016. As a good corporate citizen, we will comply with the ten principles of the Compact and contribute to the creation of a sustainable society through the achievement of the Sustainable Development Goals (SDGs).

Approach to shareholder returns

In the seventh medium-term management plan, our basic policy is to return profits to shareholders, with a stable dividend as the base and a dividend payout ratio of at least 30%, also share buybacks accordingly, but I would like to aim for a total return ratio of 50% when share buybacks are included. We are still at the stage where new investments and capital expenditure to prevent opportunity losses are required, and I would like to ask for shareholders' understanding in this regard.

Becoming a corporate group that can contribute to a bright future of growth in the automotive industry

Thank you for your kind support of NGK SPARK PLUG.

As the overall automotive industry moves toward a historic revolution, automotive components manufacturers need to redefine their own positions. Our Group will not be held back by our previous successes and current conditions, keeping a watchful eye on market and industry changes to reveal our path forward. And through solving societal issues, we will aim to become a corporate group that can contribute to the development of a bright future.

To our shareholders and investors, I ask for your continued understanding and support.



NGK SPARK PLUG's Value Creation Process



Risks and Opportunities

The markets surrounding NGK SPARK PLUG are entering a transitional phase, and our businesses are directly facing significant changes. We aim to identify short- to medium-term, and long-term risks and opportunities, and 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.

| | Short-term | Medium-term | Long-term | Measures |
|---|---|-------------|-----------|---|
| | ●→ Risk / opportunity expected time horizon | | | |
| Risks | | | | |
| Decline in automobiles with internal combustion engines | | | ●→ | Demand for automobiles is expected to increase over the short- to medium-term, so, we are focusing on further strengthening the automotive components business. By measures that include enhancing manufacturing efficiency with thorough process management, reducing defects and increasing the overseas production ratio in order to lessen the impact of foreign exchange fluctuations, we aim to continue securing profits, while also utilizing our advantage in terms of technological development to further increase our market share. Looking ahead, we will also utilize NGK SPARK PLUG's global sales network to the greatest possible extent as we engage in sales and distribution businesses for automotive components other than spark plugs. In addition to enhancing the automotive components business in this way, we shall also endeavor to develop the fuel cell business, medical business, and other new businesses, as we look to achieve our target of sales of 30 billion yen in these areas by the fiscal year ending March 31, 2021. |
| Peaking of demand for automobiles in developed countries | | | ●→ | We intend to make careful decisions about our future response, while closely watching trends in each country and the actions of each automaker. In the short- and medium-term, the shift to high-performance, value-added products is continuing, and we are focusing on product development and sales to allow us to address this demand. Furthermore, in the United States, where has the culture of users repairing their own cars, we shall endeavor to further strengthen our ties with the automotive repair market, and further increase our market share. |
| Decrease demand for spark plugs with trend toward engine downsizing | ●→ | | | As the trend toward engine downsizing advances, the number of cylinders and spark plugs per vehicle will decline. On the other hand, as conditions within engines become increasingly restricted, spark plugs are required that have a high level of added value in terms of ignitability, voltage resistance, etc., but there are a limited number of companies that can develop such spark plugs. We view this as an opportunity and aim to further increase profits by responding to the "increasing use of spark plugs with advanced functionality." |
| Labor shortage | ●→ | | | Since April 2018, we have taken steps to strengthen the functions of the Strategic Human Resources Department and secure the necessary human resources by promoting efforts to hire and utilize human resources on a global basis, in addition to creating a comfortable working environment by providing systems to enhance employee loyalty. In addition, we shall also work to save labor by outsourcing, increasing automation and the use of IT in production processes, and enhancing operational efficiency. Furthermore, we shall also strengthen our means of connecting with diverse human resources by working to enhance awareness of NGK SPARK PLUG. |
| Opportunities | | | | |
| Stricter environmental regulations | ●→ | | | Environmental regulations are becoming stricter in different countries, particularly in Europe, in order to create a sustainable society. In order to realize this objective, NGK SPARK PLUG develops and sells various sensors related to engine temperature increases and exhaust gases for automobiles. Looking ahead, opportunities to provide these products are expected to increase in line with stricter environmental regulations, including providing products for new installment in motorcycles in emerging countries, particularly India and Southeast Asia, and increases in the number of units in use per vehicle. |
| Expanded demand for automobiles in emerging markets | | | ●→ | At present we are focused on expanding our market share, mainly in China and India, and are implementing sales strategies tailored to each region. In China, we are seeing favorable sales of low-price spark plugs tailored to the market, which we began selling in the previous year. In addition, we are focusing on building a network of distributors in inland regional cities, building relationships with local manufacturers, and strengthening our sales network. In India, we are focusing on building and strengthening our sales support systems. |
| Increasing semiconductor-related products in line with increase in semiconductor demand | ●→ | | | In the semiconductor-related business, we are expanding the uses and customers for our semiconductor manufacturing equipment-related products, by leveraging synergies with NTK CERATEC Co., Ltd. (former Nihon Ceratec Co., Ltd.), with which we integrated management in 2015. In the semiconductor business, we are developing semiconductor packages for various uses. |
| Possibilities of a society powered by hydrogen energy | | | ●→ | We are promoting the fuel cell business as a growth business and aim to become an integrated supplier and manufacturer of SOFC (solid oxide fuel cells) stacks. In future, we shall also begin developing SOEC (solid oxide electrolysis cells), which produce hydrogen. In addition, we are also developing products that look toward a society powered by hydrogen energy, including hydrogen leak detection sensors to protect the safety of hydrogen-powered vehicles. |

Message from Finance Officer

First half of seventh medium-term management plan largely progressing as planned.

Engaging in ROIC management and aiming to achieve stretch goals while maintaining a sense of balance.



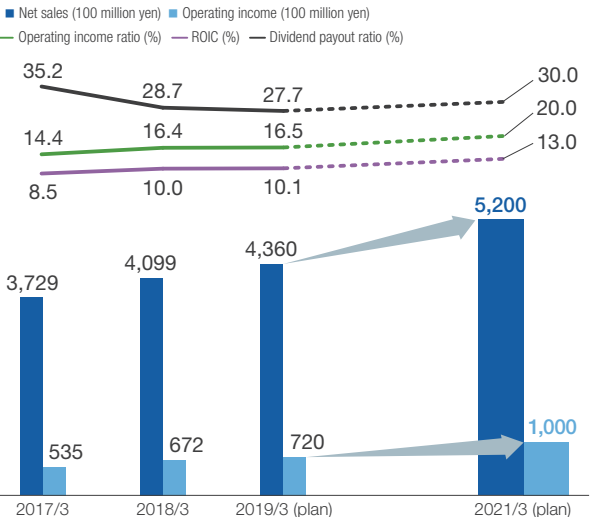
Kenji Isobe
Member of the Board,
Corporate Officer
Senior General Manager,
Corporate Administration Group

Progress toward management indicators

Our seventh medium-term management plan (hereinafter “mid-term plan”), which began in April 2016, contains stretch goals, particularly in its second half, but our progress in the first half has been generally in line with plans. We are gradually approaching our targets, with the operating income ratio and ROIC* at 16.4% and 10% respectively in the year ended March 31, 2018. Although our targets of an operating income ratio of 20% or more and ROIC of 13% or more are high, I believe it is important that we maintain our strength of being a “highly profitable company.” We have made employees across the company conscious of our motto, “set stretch goals and achieve completion,” but I would like to contribute to achieving management indicators in terms of our financial strategy, taking into consideration awareness of ROIC, reduction in capital-raising cost, sense of balance in balance sheets, cash flows, and profit and loss, balance in investments between existing and new businesses, and total return ratio.

*ROIC: Net operating income after tax ÷ invested capital

Business performance indicators



Approach to financing

At NGK SPARK PLUG, we have made ROIC a management indicator because we believe it is important to ensure investment efficiency across all businesses and improve corporate value by targeting efficient operation across the company as a whole, effectively utilizing funds, including those raised by means other than equity from the market. When creating budgets, we assess business continuity and other factors, while making comparisons with budgets in three years’ time, including ROIC, and comparing targets and present values each quarter. I feel that awareness of ROIC has gradually spread in each business, but in terms of ROIC for the company as a whole, I think we should increase ROIC by increasing the numerator in the ROIC formula (net operating income after tax), rather than reducing investment. In ROIC management, each business manages ROIC based on the asset base (accounts receivable - trade + inventories – accounts payable - trade), but for the company as a whole, we shall manage ROIC based on the liabilities base (interest bearing debt + shareholders’ equity). We shall focus on how much return on invested capital (ROIC) can exceed the weighted average cost of capital (WACC) as a management target for the company as a whole. While the business side is tasked with enhancing ROIC, on the financial side we shall fulfill the role of reducing WACC from the current 6% or so as much as possible. Taking this into consideration, we shall approach financing with a long-term perspective, while maintaining a sense of balance in regard to the two issues of: 1) financing plans that take the DE ratio into account; and 2) ratings to contribute to interest bearing financing at a low cost.

Approach to use of funds

In regard to the use of funds raised, NGK SPARK PLUG intends to invest in new businesses and growth businesses to create new business pillars, in addition to reforming our business portfolio to prepare for circumstances where the automotive components businesses cannot maintain the current high level of profitability over the ultra-long-term. However, demand in the automotive components business is currently stronger than expected, and there is a risk of opportunity losses if we refrain from investment in existing businesses. Accordingly, we shall attempt to maximize profits by investing in existing businesses, while also increasing the proportion of investment in new and growth businesses, although this shall also require balance. In particular, starting from this year ending March 31, 2019, we have increased new businesses’ share of R&D expenses, and the number of opportunities to consider investment in new businesses has also increased. In addition to increasing the proportion of investment in new businesses and growth businesses over the long-term, in order to steadily develop profitable businesses, we shall also make difficult investment decisions at the same time in order not to allow any opportunity losses in existing businesses.

Approach to shareholder returns

Returns to shareholders are based on three measures: “stable returns,” “dividend payout ratio of 30%,” and “share buybacks.” In the past, internal reserves remained high as dividends and share buybacks were moderate, and this was

also one reason our WACC has been high. Our company believes that conducting steady dividends and reducing our equity ratio through share buybacks will ultimately lead to shareholder returns, in other words, the total return ratio will increase. Balance is important here as well. While maintaining our shareholder returns measures, we intend to allocate profits in a well-balanced manner between investments in growth businesses, and the employees who support the company.

Approach to financial and management indicators going forward

NGK SPARK PLUG has been a highly profitable company for many years, and I think there has been a culture of focusing solely on profit and loss for that reason. However, going forward, I think we must focus not only on profit, but also on the balance sheet and cash flows, otherwise stakeholders, particularly investors, may increasingly not approve of aspects of our management. We shall endeavor to enhance corporate value, based on the approaches to future financing, use of funds, and shareholder returns I have described.

To achieve our goals

For the seventh medium-term management plan, we shall firmly seek new business in the first half of the five-year period and look to achieve our ambitious targets as these efforts bear fruit and we see growth in the second half. I will cautiously observe progress as the person responsible for accounting and finance, and do my utmost to provide support to achieve our goals.

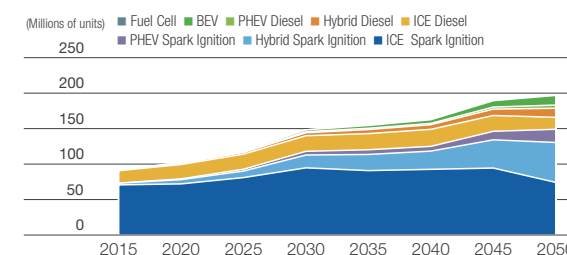


Plug and sensor's future strategy

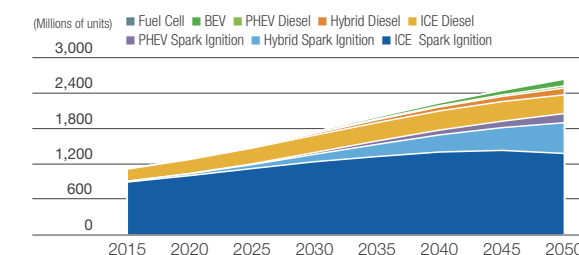
Ongoing spark plug demand

Figure 1 Estimated global number of vehicles sold and vehicles owned

Global number of vehicles sold (RTS)

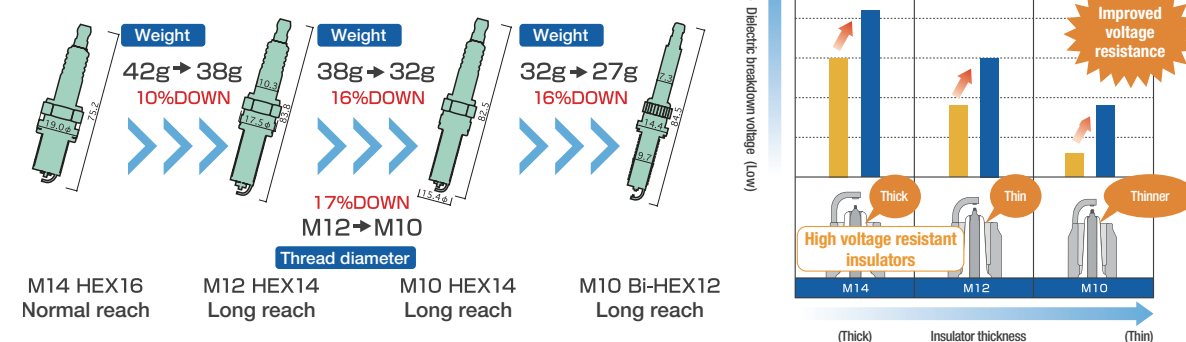


Global number of vehicles owned (RTS)



Source: Based on IEA Mobility Model data developed by the International Energy Agency, ©OECD/IEA 2018.

Figure 2 Creating compact and durable spark plugs



Business environment and trends

Spark plug demand continues to grow

As environmental regulations across the world become increasingly strict, development of electric vehicles (EVs) at automotive manufacturers is rapidly advancing. In reality, many unresolved issues remain, such as charging time, driving range, and battery manufacturing costs, and it is believed that it will be some time before the proliferation of automobiles that run solely on electrical power. Furthermore, even if the transition to EVs accelerates rapidly, the first to achieve critical mass will be plug-in hybrid vehicles or hybrid vehicles that feature an engine, and spark plugs will continue to be a requirement. Therefore, demand for plugs disappearing is a risk to be considered over the long term.

Additionally, of spark plugs sold, approximately 75% are for repairs, and unless all vehicles including those already owned transition to those that run solely on electric power, demand for spark plugs will not disappear. In Asian countries such as China, the number of new automobiles sold is projected to continue to increase, and in emerging markets

in particular, it is estimated that sales of automobiles with engines will remain strong. In tandem with this, it can be assumed that sales volume of spark plugs will also grow.

Figure 1

High technological barriers in spark plugs

In automobiles, to address environmental concerns and associated issues in fuel economy, low emissions, and interior space, the development of increasingly compact engines, or engine downsizing, has become a recent trend. In line with engine downsizing, spark plugs are now required to be thinner and longer. Meanwhile, as the conditions in which spark plugs are used become more difficult, creating thin ceramics that are required for insulator sections is generally considered to be difficult, and the technological barrier grows by the day.

Figure 2

Our strengths and future strategy

Use technological advantages to work toward expanding market share

We are a company that has refined our ceramics technologies as a “comprehensive ceramics manufacturer” for over 80 years, and have a significant advantage in ceramics technologies.

To “improve durability” and “reduce diameters” of spark plugs, the improvement of the insulator part is a necessity, as it serves as the foundation for spark plugs performance. The insulator part is made of ceramics and accounts for the majority of a spark plug’s composition. Since we are involved in the entire process of ceramics production from the materials research stage to the manufacturing stage, we are able to respond in detail to requests for high performance and specifications.

Additionally, since we have business connections with nearly all automotive manufacturers, we are able to grasp technological trends and respond appropriately. We are then able to sell products that are the first to reflect these cutting

edge technological trends on repair markets across the world, ensuring that the needs of the repair market are met. By making use of these strengths, and to maximize profits, we will secure required production abilities for an ever-expanding market, create structures to enable the production of approximately 1.0 billion units annually by the year ending March 31, 2021, and work toward further expanding our market share.



Figure 3 Regulatory trends, elemental technologies, and compliant products

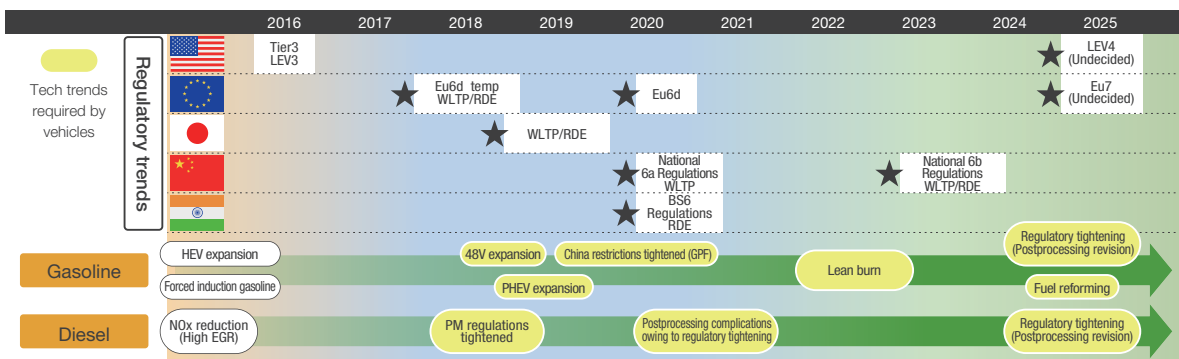
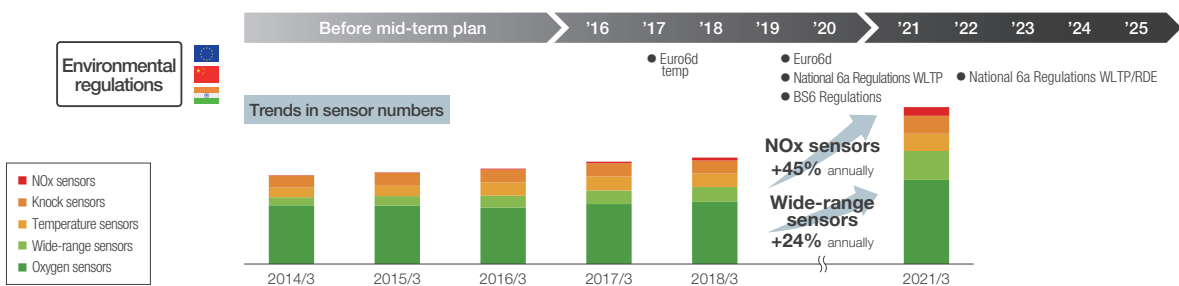


Figure 4 Trends in sensor numbers



Future of the sensor business

with high added-value sensors

Business environment and trends

Stronger exhaust gas regulations to cause growth in sensor demand to continue

“Living in harmony with the environment” has been a longstanding issue in the automotive industry. From the 1990s onward, in developed nations such as Europe and the United States, exhaust gas restrictions have been put in place, growing increasingly strict. Furthermore, in emerging markets as well, environmental restrictions are being tightened in recent years, and in China, where air pollution has become a dire issue, exhaust gas restrictions will be further strengthened in around 2020, creating further demand for exhaust gas sensors.

Additionally, in India, stronger exhaust gas restrictions are planned for motorcycles, causing a significant increase in demand for exhaust gas sensors for motorcycles as well. We believe that the wave of stronger exhaust gas restrictions will continue to spread across the world.

Figure 3

Difficult technological barriers

Owing to stronger exhaust gas restrictions in various countries, the performance required of exhaust gas sensors is rising. Not limited to oxygen sensors that were mainstream to this point, the need for products with high added value is increasing, including wide-range sensors that can measure exhaust gas conditions in greater detail and NOx sensors that can measure nitrogen oxide. The development of such sensors requires not only time, but a high level of manufacturing technology for the processing of their ceramics, meaning only a handful of companies have the capabilities for development.

Figure 4

Our strengths and future strategy

Leverage technological advantages and strengthen production structure

As such environmental restrictions progress further, it is estimated that the number of motorcycles and automobiles newly utilizing exhaust gas sensors will increase while the number of sensors installed per vehicle

will also increase, and we project that this will cause demand to rise significantly in exhaust gas sensors. As a company with ceramics technologies for the development of high value-added sensors and a diversified portfolio of products in the exhaust gas sensor field, we believe that our company has a strong advantage in future development.

To establish a structure for future increases in demand, we are working to strengthen manufacturing capabilities for various sensors in countries such as India, Thailand, and the United States. By further strengthening our development abilities, we will improve our future market competitiveness, accelerate business expansion, and contribute to environmental conservation.



A factory being expanded in India to strengthen our production capabilities, primarily in regard to oxygen sensors for motorcycles. (Scheduled to be completed in 2019)



Product development derived from ceramics

Creating New Value

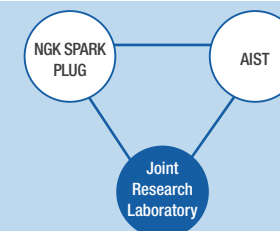
Environment- and energy-related field Expanding use of planar SOFC cell stacks

Regarding planar SOFC cell stacks that are currently under development, in addition to previous residential uses, we have expanded their use to commercial and industrial applications, which require more power output. We are engaged in development and evaluation to respond to the performance demands of fuel cell system manufacturers in the commercial and industrial sector that require high efficiency and long-term reliability. As a part of this effort, we are providing cell stacks to experimental machinery manufactured by Hitachi Zosen Corporation and are participating in experimental trials. Moving forward, we will work to grow our portfolio of achievements to expand our business in providing cell stacks for fuel cell batteries in a wide range of outputs and applications.



Medical field Established research laboratory toward development of medical and healthcare products

In April 2017, to strengthen materials R&D for medical and healthcare products, we established a materials and chemistry research laboratory within the National Institute of Advanced Industrial Science and Technology (AIST). Through cooperation between our company, with our strengths in product development utilizing new ceramics materials, and AIST, with its high technological potential for the combination, device creation, and evaluation of medical materials and advanced ceramics, we are working in partnership to realize innovative healthcare products and contribute to improving QOL (quality of life) for people.



Next-generation automobile field Hydrogen leak detection sensors

Hydrogen leak detection sensors detect small hydrogen leaks from fuel cell systems and stop the provision of hydrogen to fuel cells. As our hydrogen leak detection sensors do not use chemical reactions, they have low degradation over time, are fast to start up and respond, and utilize a "heat transfer method" that is resistant to vibrations and shocks, allowing for highly accurate measurements on the existence of hydrogen gas through measuring the amount of heat dissipated on the heater (detector element) by hydrogen.



R&D with ceramics at the core

Ceramics have characteristics that include "insulation," "heat resistance," and "abrasion resistance." Our company has grown by developing and manufacturing products that utilize these characteristics.

Additionally, through creating new value by combining ceramics with other materials such as metals and plastics and technologies and quality management that enable mass production of uniform products, we distribute our products worldwide.

Spark plugs, which have been developed and manufactured since our founding, require "trustworthiness" and "high quality" that are able to accurately function in engine environments that reach temperature of up to 2000 degrees Celsius. To overcome these strict requirements, we have been relentless in R&D, constantly polishing our ceramics technologies.

With the objective of diversification that makes use of these materials technologies, we have been involved in the development and manufacture of new products that make use of ceramics as "NTK Technical Ceramics" since 1949.

Leveraging the characteristics of ceramics (zirconia), we have paved the way toward our future through constant development of new products such as "exhaust gas sensors" that measure automotive exhaust gas conditions, ceramic cutting tools that offer heat resistance and durability, and semiconductor packages that protect IC chips from heat and so on.

Currently, we are focusing our efforts on R&D in the "environment- and energy-related field," "medical field," and "next-generation automobile field." In the "environment- and energy-related field," we launched the fuel cell business with the intent of contributing to the future energy society. In solid oxide fuel cells (SOFC), which are being developed for use in residential, commercial, and industrial applications, we have been engaged in development by concentrating our manufacturing technologies in semiconductor packages and spark plugs (multilayer technologies, technologies to combine metals and ceramics). In view of future demand that is expected to result from rapid proliferation, we are advancing measures toward improving capabilities and establishing mass

production structures. In the medical field, we are aiming for overseas expansion of products such as artificial bones, and will work to fulfill our duty to create products needed by an aging society. In the next-generation automobile field, we are developing hydrogen leak detection sensors that can detect the leak of hydrogen, a flammable gas, to ensure the safety of hydrogen automobiles. Furthermore, we have also focused on development of solid-state batteries, which are expected to be

next-generation energy storage devices, and are working to see their use in home appliances, mobile phones and drones, as well as in mobility applications, in the future. Additionally, to leverage exhaust sensing technologies found in gas sensors in fields other than automobiles, we are seeking applications in differing fields, such as agriculture and medicine.

We will strive to create new businesses utilizing our technologies.

"DNA Project" to create a corporate culture that encourages new ideas

As an "engine for promoting new businesses" across the entire company, we launched the "DNA (Dynamic New Approach) Project." Since 2016, selected team members are executing projects in an incubation office. From among these, a new company, "Sharing FACTORY," was established in March 2018. This company provides sharing services to the manufacturing industry.



Review of Business

Automotive
Components group

We are supporting the world's motorization through the supply of products, mainly components for internal combustion engines. These include spark plugs to serve as a "lighter" for the electrical ignition of fuel-air mixture; various automobile sensors that greatly contribute to the purification of exhaust gas from gasoline- or diesel-powered vehicles; and glow plugs to assist the autoignition of diesel engines. We are also developing and selling hydrogen leak detection sensors to ensure safety in a world powered by hydrogen energy.

Net sales

348.2

 billion yen

(Increased by 9.4% year on year)

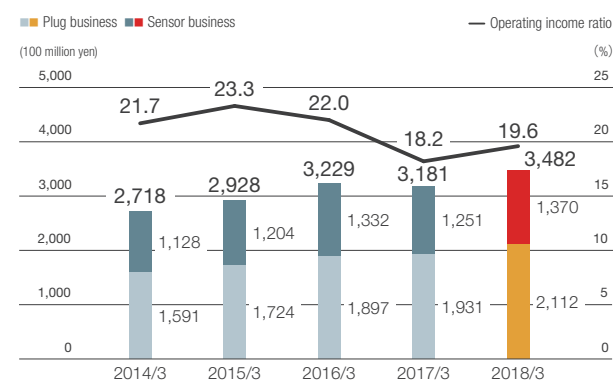
Operating income

68.1

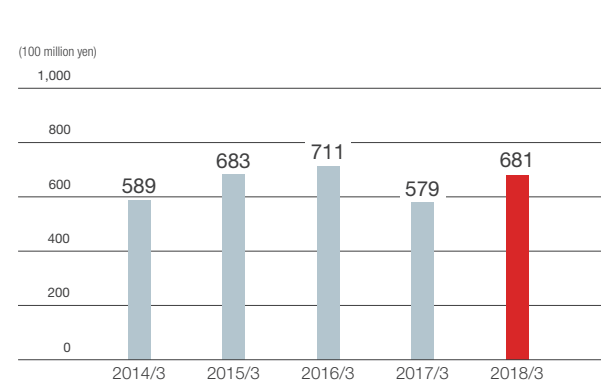
 billion yen

(Increased by 17.4% year on year)

Sales/Operating income ratio of the automotive components group



Operating income from the automotive components group



Review of operations

In the automotive industry, the Group's main business field, conditions were supportive for sales in the United States, including a stable labor environment and low gasoline prices, but new automobile sales decreased overall compared to the previous fiscal year. Unit sales of automobiles remained favorable in China, increasing compared to the previous fiscal year despite the impact of the end of tax reductions for small vehicles. Overall unit sales of automobiles in Japan exceeded those in the previous fiscal year, despite being affected by issues related to improper testing at automakers.

Financial results for the fiscal year ended March 31, 2018

Due to the favorable sales of new cars in China and other markets, we recorded steady sales for automotive components. Also, our sales of repair parts were satisfactory, being driven by sales in China, North America, and South America. As a result, in the automotive components business, we posted net sales of 348,198 million yen (up 9.4% year on year) and operating income of 68,098 million yen (up 17.4% year on year).

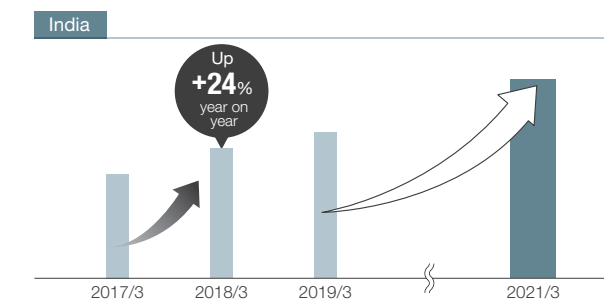
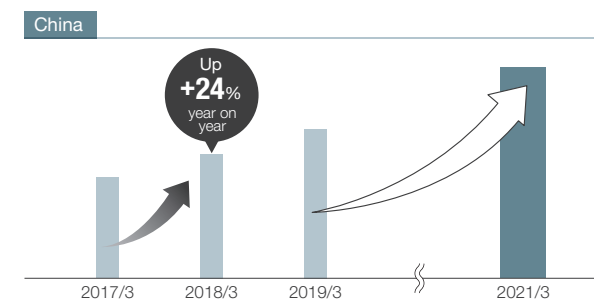
Medium-term management plan progress

Plug business

NGK SPARK PLUG Group is making good progress on our strategy of expanding our market share in China and other emerging markets. In regard to sales, we have focused on "building our sales network," "increasing penetration of the NGK brand," and "introducing low-price spark plugs targeted at emerging countries," and as a result, we have been able to strengthen relationships with prominent distributors and increase the number of stores selling our

products, while also enhancing brand recognition with proactive marketing activities. In addition, new products have been well received in emerging markets, and in the fiscal year under review, sales volume of spark plugs increased by 24% compared to the previous fiscal year in each of our priority markets of China and India. Looking ahead, we shall continue making efforts to further increase our market share.

Spark plug sales volume by region



Sensor business

Sales of diesel-powered vehicles declined in Europe, which has particularly affected demand for temperature sensors, but sales volumes are expected to recover on demand for temperature sensors for gasoline-powered vehicles over the medium-term. Amid increasingly strict environmental

regulations globally, we forecast that sales volume will increase by approximately 45% and 24% on an annual basis for NOx sensors and wide-range sensors, respectively, over the period from the fiscal year ending March 31, 2019 until the fiscal year ending March 31, 2021.

Forecast for the year ending March 31, 2019

Although global growth in unit sales of new automobiles is expected to slow, we intend to promote sales of a wide range of automotive component products by utilizing our existing sales network to the greatest possible extent, while also capitalizing on the trend toward more added

value owing to stricter environmental regulations in different countries. As a result, we expect that we will record net sales of 367,419 million yen (up 5.5% year on year) and operating income of 71,902 million yen (up 5.6% year on year).

Our semiconductor packages and substrates made by using our unique ceramic multilayer technology are adopted for a range of products, including communication devices, smart devices, medical equipment and cameras.

Technical ceramics group

– semiconductor div. –

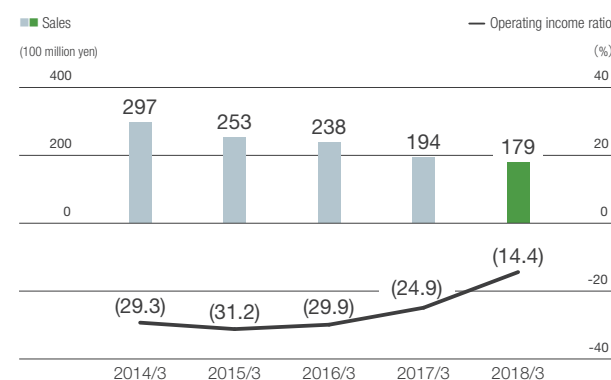
Net sales

17.9 billion yen
(Decreased by 8.0% year on year)

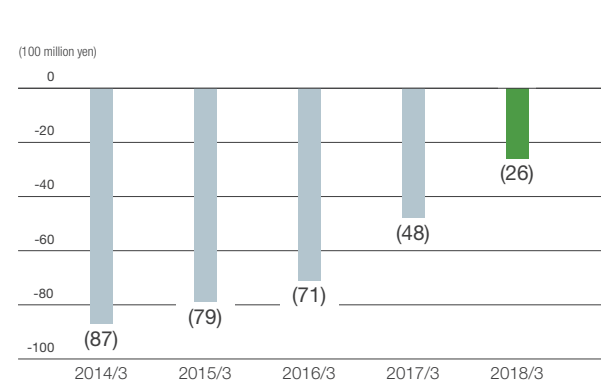
Operating loss

2.6 billion yen
(4.8 billion yen loss in the previous fiscal year)

Semiconductor-related sales/Operating income ratio



Operating income from the semiconductor div.



Review of operations

Production of high-end smartphones and smartphones made by Chinese manufacturers is trending favorably. In addition, the semiconductor market is being driven by increasing demand for semiconductor memory and different types of sensors, owing partly to the trend toward high-performance smartphones.

Financial results for the fiscal year ended March 31, 2018

In this business, overall sales declined compared to the previous fiscal year as we exited unprofitable product lines, but profits improved compared to the previous fiscal year as shipments of smartphone components and other products increased.

As a result, on a consolidated basis, sales came to 17,901 million yen (down 8.0% year on year) and operating loss amounted to 2,571 million yen (as compared to an operating loss of 4,842 million yen in the previous fiscal year).

Medium-term management plan progress and forecast for the year ending March 31, 2019

In the semiconductor package business, we are targeting profitability on a monthly basis in the fiscal year ending March 31, 2019, and normal profitability by the fiscal year ending March 31, 2020. For our revitalization plan, we have attracted outside management personnel and implemented initiatives including concentrating our operating sites, selecting and concentrating our product range, and optimizing the workforce. As a result, the loss has become smaller, and we are making good progress with the revitalization plan. In addition, in terms of forecasts for the fiscal year ending March 31, 2019, we intend to select and concentrate our product range and reduce costs, and as a result, we expect that we will record net sales of 16,320 million yen (down 8.8% year on year) and operating loss of 1,404 million yen (as compared to an operating loss of 2,571 million yen in the current fiscal year).

Technical ceramics group

– ceramics div. –

In the cutting tool business, we have developed new materials for cutting tools in addition to ceramic materials, and manufacture a wide range of products. Our ceramic products for industrial use include components for semiconductor manufacturing equipment and other products that make use of the unique features of ceramics. We are also continuing to develop new business fields.

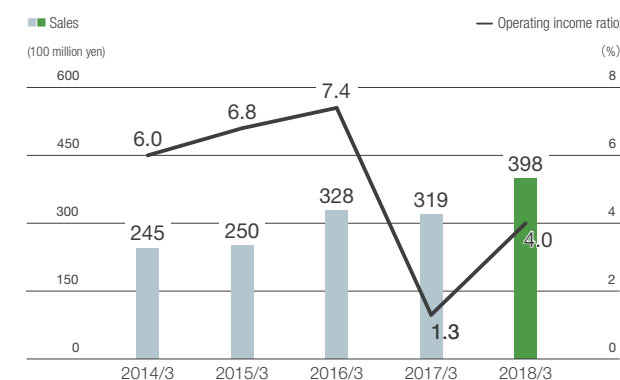
Net sales

39.8 billion yen
(Increased by 25.0% year on year)

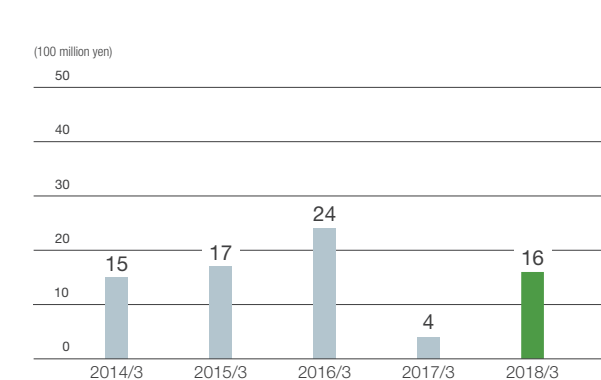
Operating income

1.6 billion yen
(Increased by 296.8% year on year)

Sales/Operating income ratio of the ceramics-div.



Operating income from the ceramics-div.



Review of operations

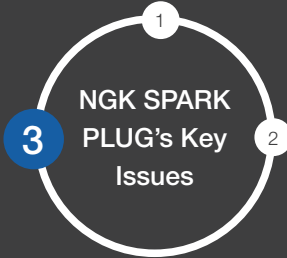
Shipments remained favorable for cutting tools and ceramic products to be used in industrial equipment. Increased shipments of components for semiconductor manufacturing equipment particularly contributed to an increase in sales.

Financial results for the fiscal year ended March 31, 2018

In this business, shipments remained favorable for cutting tools and ceramic products to be used in industrial equipment. Increased shipments of components for semiconductor manufacturing equipment particularly contributed to an increase in sales. As a result, consolidated sales for the business came to 39,834 million yen (up 25.0% year on year) and operating income to 1,589 million yen (up 296.8% year on year).

Medium-term management plan progress and forecast for the year ending March 31, 2019

In order to respond promptly to strong market growth, including decisions about production, we implemented organizational changes in April 2018, making the Semiconductor Production Equipment Division an independent division in order to increase speed. In addition, we plan to make investments totaling billions of yen through the fiscal year ending March 31, 2020, with the policy of responding to market demand and not allowing any opportunity losses. In addition, in terms of forecasts for the fiscal year ending March 31, 2019, we intend to establish a stable profit-making system, and as a result, we expect that we will record net sales of 45,816 million yen (up 21.7% year on year) and operating income of 4,656 million yen (up 27.5% year on year).



General Manager of Human Resources speaks:
**Personnel Reform by
the Strategic Human
Resources Department**

Tomohiro Yamaguchi
General Manager, Strategic Human Resources Department
Corporate Strategy Group

“Globalization” is critical

Our company has advanced our businesses with the motto of “global, speedy, and fair,” and at present, over 80% of our sales are generated in overseas businesses. Meanwhile, the human resources division primarily managed domestic labor, whereas outside Japan it primarily managed expatriates, presenting issues where the “globalization” of the personnel function lagged behind.

To resolve these issues, we first started periodically holding a “Global Personnel Conference” from 2013, and through networking with personnel divisions at key bases worldwide, we have advanced the “globalization” of the human resources division. The Strategic Human Resources Department was launched in April 2017, and in April 2018, we reorganized such that the former Human Resource Department is now specialized in domestic labor management as the Labor Department while the Strategic Human Resources Department is tasked with global personnel development such as hiring and training. The number of people working in the Strategic Human Resources Department has grown from 14 people before the reorganization to 50, and from the idea that we should respect diversity and assign capable personnel, 15 women and two foreigners are also part of the department. In essence, the Human Resources Department has just begun measures in “personnel reform” that will shift from the previous section centered on domestic labor to a section that comes up with personnel strategies that unify management and business on a global scale.

Human resource policy

Our current human resource policy is: “We acknowledge that employees are the most important management resource. 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.” Under this policy, we define one aspect of our ideal image in the year 2020 as being a “human asset company,” but to accomplish this, I believe that it will require a “fair corporate culture that allows diverse personnel to shine,” “frameworks to enable autonomy, challenge, and growth,” and “high professionalism and love for the company.” Under this policy, we have defined

“personnel development and organizational invigoration to maximize performance” as the Strategic Human Resources Department’s mission, and with the objective of becoming an HR specialist organization that promotes human resource strategies that unify management and business, we have defined “Observe,” “Develop,” and “Motivate” our employees as our basic stance.

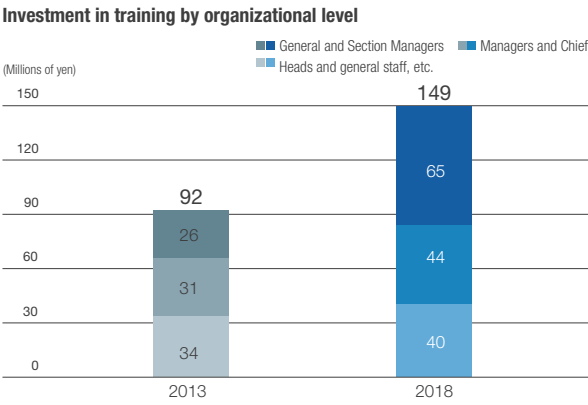
“Observe”

First, we must engage in “observing.” Domestically, we have a certain grasp of what types of human assets lie where thanks to our history of hiring and educational activities. However, moving forward, we must expand this approach to cover our operations globally. Talent management is carried out by the RHQ in each region, but on the other hand, in the Strategic Human Resources Department, we would like to discover human resources with the potential to become managers from within the NGK SPARK PLUG Group as a whole. To this end, we must create a “human asset bank.” In addition to information on skills such as work histories and training achievements, information that includes mindset information such as attendance records and willpower will be collected through methods such as employee surveys and individual interviews and stored in a databank. As the first step in this initiative, we implemented for the first time a 360-degree survey for employees at the general manager level during the year ended March 31, 2018. Our aim was to make managers understand how their subordinates and colleagues felt about them and provide multiple feedback meetings with specialists, thereby contributing to the making the company more dynamic by reviewing everyday management methods. First, we are providing opportunities for general managers to “watch people.” Looking ahead, we shall also implement measures for “observing” via “employee awareness surveys,” “corporate culture assessments,” etc.

“Develop”

Any new businesses that we create will not have a certain recipe for success like the plug business. And of course, there is no guarantee that highly capable human assets

from current businesses will enjoy the same success in new business areas. Therefore, we will bring change to development policies. By redefining what types of human assets can support new businesses and current businesses alike, we will fundamentally revise our previously uniform training programs. For example, as a measure to achieve this objective, it is difficult to generate new creativity with internal training, so we have launched programs centered on interaction with different industries. We are accepting internal applications for this program, with a focus primarily on the “ambition” of applicants. We shall implement measures for developing human resources to promote on-the-job-training (OJT) in the workplace (onsite), which is fundamentally the most effective form of training.



“Motivate”

Traditionally, personnel transfers focused on assigning the optimal human resources to each site where there were gaps in staffing. However, moving forward, we will assign personnel “systematically” after considering what types of human assets should be assigned to each department head, based on the approach of “the right people in the right places,” particularly for important positions. Essentially, our view is to move from

“optimal for business to optimal for resources.” To make sure this initiative for optimization is carried out thoroughly, we are advancing the creation of a framework for succession planning. The managerial staff in each section defines ahead of time the specific person that will be succeeding them. If there is no successor, it will become necessary to hire from outside of the company ahead of time, and this will lead to discovering gaps in our human assets.

In other areas, we are considering creating an “internal application system.” At our company, each department makes a presentation to the new graduate hires, and the new graduates may then request assignment of their choice based on what they learned in these presentations, and then the company matches them with their choices. This method of personnel assignment has been used for over 10 years. However, the first department that these young employees are assigned to may not always be the best place for them. In addition, it is difficult for employees to put themselves forward for work they want to do. The company shall thus create a system of personnel assignment based on “the right people in the right places.”

Furthermore, as a way to support the activities of senior citizens, we will also work to implement measures to create work for our senior workers, such as a job matching system that matches the company’s needs with the desired functions sought after by seniors.

In the Strategic Human Resources Department, with the establishment of a human asset bank to “Observe” as our foundation, we will solidify our training policy that will serve as a pillar for “Develop” by the end of the current fiscal year, and subsequently, we plan to roll out initiatives to “Motivate.” Under the spirit of “No Attack No Chance,” we will engage in reforms with speed.

Review of Strategic Resources

Review of Strategic Resources

Human Resources



Basic Philosophy

Development of human resources

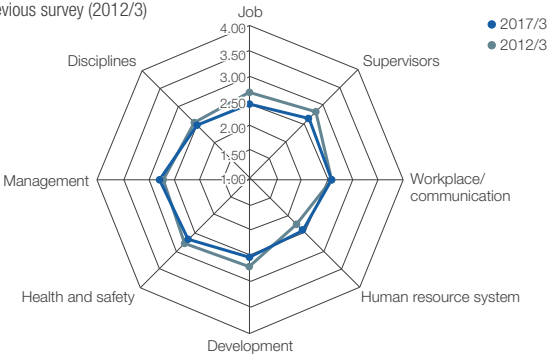
Employees are the most important management resource. We promote the sustainable growth of the NGK SPARK PLUG Group by striving for human resources development that respects the diversity and individuality of our employees and by encouraging individual employees to reach their own full potential, to grow and to participate actively in a state of physical and mental health.

Rolling out PDCA Cycle through Employee Satisfaction Surveys

The Group conducts an “employee awareness survey” in an effort to see what extent the vision and policies of management have taken hold and understand the current status of diversified personal values, environment and workplace with the aim of achieving the management policy of the Corporate Philosophy: “We offer a working environment in which each one of us is encouraged to make full use of his or her personality and capability. With all our power we are dedicated to pursue management based on trust and confidence.” In the survey of the year ended March 31, 2017, we collected answers from 89.6% of employees. Based on the results, each division has formulated an action plan and rolled out a PDCA cycle so as to attain better results in the next awareness survey, which in turn will lead to an enhancement in capabilities at the workplace.

Analysis result by category

Comparison with the previous survey (2012/3)



In the previous survey results, the human resource system scored low. After the adoption of a new human resource system, however, better results are shown in 2016 survey with all eight categories balanced out with no particular weakness.

HAGI Program

In view of our globally expanding business operations, we launched the “Global Next-generation Management Personnel Development Program” in 2016, for discovering and developing personnel eligible to become the next-generation of management among those from all Group companies. We conduct hiring and recruitment of human resources regardless of nationality, and provide opportunities and environments to enable every employee

to actively participate. In recent years of great environmental change, the program is intended to offer learning opportunities for personnel representing the next generation, and it is called “HAGI,” from the “Shokason-juku” private school located in Hagi-shi, Yamaguchi Prefecture, from where many talented people went out into the world at the end of the Edo era. The president serves as the principal of the program.

Basic Philosophy

Diversity

We believe that if every employee utilizes their individuality and freely leverages their capabilities, it will contribute to the growth of the company and individual happiness, and we therefore position diversity as an important management strategy. We are promoting diversity to create an employee-friendly workplace that accepts different personnel “assets” (one in which all people regardless of their gender, age, disability or nationality, enjoy their work), and effectively use the new value and ideas generated by such a workplace.

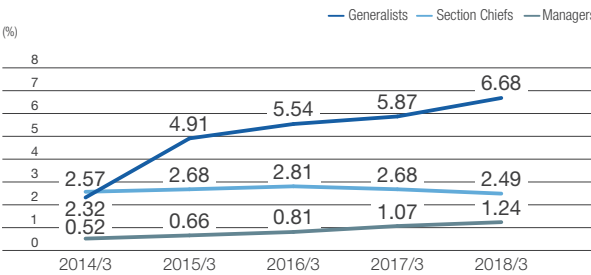
Strengthening and Maintaining Initiative to Promote Active Participation of Women

In 2013, the company as a whole set about creating a workplace where women can actively participate, as our first step toward diversity. We have positioned active participation by women as an engine for promoting the reform of our corporate culture, and have changed the mindset of managers and female employees themselves.

Specifically, we implemented a training program in which a female employee is paired with her manager, in order to support career development and increase ambition. Under the program, she takes on the challenge of performing a task that is one level higher than the task presently assigned to her for nine months, and her manager offers advice to help her fulfill the task, thereby supporting her growth. We also hold lecture meetings and training sessions of diversity management for all senior managerial employees. Furthermore, in all departments, including those of Japanese Group companies, general managers devised action plans that suited their own departments. We presented Encouragement Awards to departments with outstanding initiatives. In addition, we are expanding systems to create a workplace that is more comfortable for female employees.

These activities received approval, and we have received broad recognition by society for our activities, including being selected for the “2014 Excellence Award, Nagoya City Accreditation and Commendation System for Companies that Promote Increased Roles for Women” and the “2015 Japan Productivity Center Incentive Award, Empowerment Grand Prix for Activities by Women,” as well as being selected by the Ministry of Economy, Trade and Industry for its “New Diversity Management Selection 100” in 2017, and being certified by Aichi Prefecture as an “Aichi Josei Kagayaki Company” (Company Supporting Aichi Women’s Career Success) for fiscal 2018.

Proportion of female employees

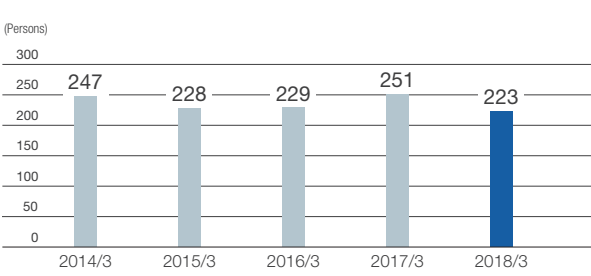


Promoting the Active Participation of Senior Citizens

As the birthrate declines and the population ages, labor shortages are expected owing to a decline in the working age population and an increase in the elderly population. On the other hand, promoting the active participation of senior citizens is an important issue, including raising the starting age for receiving national pension and ensuring employment for the elderly. In 2001, we introduced a post-retirement reemployment system for providing work opportunities to retired employees so that long-accumulated knowledge and expertise are effectively utilized. In year ended March 31, 2018, the total number of employees using this system was 223. We are working hard to prepare an environment that meets the needs of senior employees, our company and the worksite and use it in a way

that takes into consideration the aptitudes, motivation and abilities of senior employees.

Total number of employees using the reemployment system



Employment of the Disabled

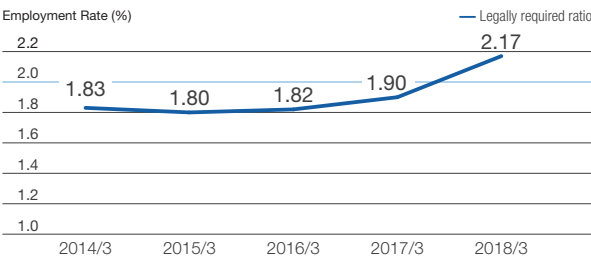
“Nittoku Smile Co., Ltd.” which establish for promoting employment of the disabled certified as the special subsidiary company in January 2018.

The ratio of disabled employees at our company was 2.17% in year ended March 31, 2018, so we were able to meet the statutory employment rate.

Additionally, we already had met the statutory employment rate in year ended March 31, 2019 at June 2018.

For broadening the scope of work to the disabled, we promote to make more decent workplace for them.

Percentage of Disabled Employees



Research & Development

Intellectual Property Management

Framework and Policies of Research and Development

Research & development activities at the Group are being conducted toward creation of new value by leveraging the best technology and accumulated experience, based on our corporate philosophy. Activities are mainly conducted at Engineering R&D Group and respective technology departments of each division, and we strive

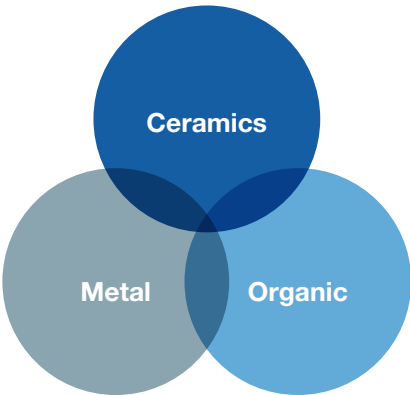
for a higher level by using the latest technology that is attained through active participation in academic conferences and associations both in Japan and overseas or joint research projects with universities and public research institutes, etc.

Open Innovation

We are actively engaging in the creation of new innovation by utilizing our core technology cultivated to date.

Here, core technology means technology by which ceramics can be combined with other materials such as metal and organics to make products used in the field where the high reliability and durability are required. We are advancing application of the core technology mainly into the three areas of “environment and energy,” “next-

generation vehicles,” and “medical” as new business domains. Further, we are proactively seeking for partners to work with in an effort to find solutions of social issues which cannot be achieved by the Company alone. In April 2018, we established Open Innovation Center in San Jose, California, USA, accelerating activities targeted at new business creation.



Basic Philosophy

To protect its existing and newly developed products, the company takes steps to actively acquire intellectual property rights and make effective use of them. We investigate the intellectual property rights of third parties in all production processes, from early stages of development to mass production, to avoid the risk of infringing the intellectual property rights of third parties or violating contracts, laws and regulations. We also verify the appropriateness of the intellectual property-related provisions in various contracts. In addition, we are educating employees on the importance of intellectual property. In the future, we will strengthen the management of intellectual property across the Group, as the basis for our continued evolution as a “Monozukuri Company.”

NGK SPARK PLUG’s Activities Regarding Intellectual Property

At NGK SPARK PLUG, we have created systems for responding in a timely, strategic manner on a global level, based on our management policies and business strategies, in order to “further stimulate the onsite operations of the entire company, the development of new technology and products, and their commercialization in regard to activities related to intellectual property, and propose and promote

intellectual property strategies to contribute to profits in our core businesses.” In accordance with this objective, we take measures to address intellectual property requirements in accordance with the development stage, in order to respect the proper rights of third parties. In addition, we also utilize patents as a source of technical information to analyze R&D trends, thus assisting in discovering new subjects for our R&D.

Promoting Measures to Stamp Out Counterfeit Goods

As our spark plugs “NGK SPARK PLUGS” are sold in more than 190 countries around the world, it is one of the important issues to manage trademarks and further undertake measures against counterfeit goods.

We have been working with each Group company around the world and with local law firms to proceed with activities to stamp out the imitation of NGK SPARK PLUGS. Those activities have been implemented primarily in China, and are being strengthened in regions such as

the ASEAN and India, where economic growth continues.

Counterfeit goods, which threaten the safety of customers, are becoming more sophisticated and are being traded in smaller lots over the Internet, etc. We have been continuously engaging in activities to uncover and stamp out counterfeit goods in close cooperation with the police, customs authorities, and relevant administrative agencies.

Quality and Manufacturing



Basic Philosophy

We regard all the value, expectations, and evaluations provided to customers through products and services, and all the people, goods, processes, and arrangements involved in producing them as “quality.” We are always conscious of making the best value for customers, and aware that we are the ones who support quality, we continue to grow, ambitiously applying creativity and imagination to all operations. We create value for customers in accordance with our Corporate Quality Rules and Corporate Quality Policy. We will continue to contribute to society with safe and trusted manufacturing, as well as the development of human resources who effectively and efficiently implement total quality management (TQM), which enables us to respond flexibly and promptly to the evolving internal and external business environment. NGK SPARK PLUG is working to share and practice the concepts of TQM (Quality Management) in order to become a Group company that creates value for all stakeholders and has a system that can respond flexibly and swiftly to change. Based on our CSR Policy, we have updated NGK SPARK PLUG’s Corporate Quality Rules and identified the following five areas as the mainstays of total quality management (TQM).

- 1

Quality assurance
In order to provide products and services that meet the needs of our customers and society, NGK SPARK PLUG will establish all operations and guarantee their safety and reliability and promote development activities aimed at creating new value.
- 2

Daily management
NGK SPARK PLUG will consider methods and indicators to measure the quality of all our operations and promptly investigate the causes when results that differ from normal are obtained as well as taking countermeasures to maintain and improve quality.
- 3

Policy management
NGK SPARK PLUG will further improve and innovate activities to maintain and enhance quality. We will establish strategies and objectives for creating new value for customers and responding to the evolving internal and external business environment and explicitly identify issues and problems that need to be tackled as we work towards achieving our strategies and objectives.
- 4

Small group improvement activities
NGK SPARK PLUG will use small group teams to solve the various issues and problems identified through daily management and policy management, thereby developing human resources.
- 5

Quality control education
NGK SPARK PLUG will create the understanding and awareness of the mainstays of TQM, which are the prerequisites for maintaining and enhancing quality and activating improvements and innovation and then establish and implement a level-specific education system.

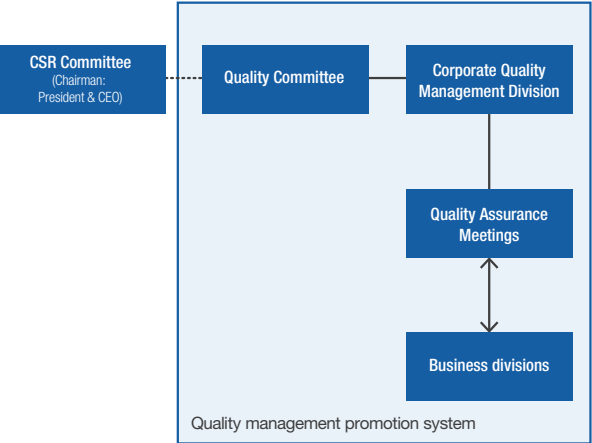
Quality Management System

In an effort to meet the demands of customers and various industries who develop products, we have obtained the certification of international standard ISO 9001 and sector standards required in each business domain, for our quality management system. We are committed to its operation and are further strengthening our quality assurance system in order to offer new value.

The Quality Committee, as part of corporate governance system, determines policies, formulates guidance and gives instructions, to optimize each function of the Company from a viewpoint of the Group as a whole.

In addition, at Quality Assurance Meetings, quality-related issues and challenges inside and outside the Company are shared and learning related thereto are provided in the quality exhibition room permanently set up inside the Company. The Meeting also promotes initiatives that lead to offering customers better products and greater services, such as exhibiting the commitment to product quality by the top management of the Company, from its founder to the current management leaders, together with what we learned from problems in the past on panels, which contributes to prevention of its obsolescence and continued education.

Quality Management Promotion System



Promoting Quality Training

We are working to develop our human assets as “making things is making people.” We have established extensive training programs that include quality control and QC Circle Activities, and many of our employees attend these programs. We are also further strengthening more advanced practice activities at work sites. We expect that training participants will improve their skill on techniques through

practical application in familiar themes in addition to spreading this learning to the employees around them. We also offer training and practical support regarding quality and problem solving for suppliers so that they provide us with consistently high quality parts and materials based on continuous quality improvement.



NGK SPARK PLUG Group QC Circle conference



In-house training

Measurement Management

Appropriate measurement management in order to obtain reliable measurements is vital in manufacturing. In order to protect the NGK SPARK PLUG brand, we implement appropriate management at the company and also

implement initiatives tailored to the issues of Group companies, making the importance of measurement known throughout the Group.

Global Procurement



Basic Philosophy

To procure superior materials and components at an appropriate price with speed and safety, it is a requirement to create healthy relationships of trust with transaction partners. By applying ourselves diligently to conduct activities through the supply chain that will be mutually beneficial, we work to grow trust between companies.

CSR Promotion in Global Procurement

As we aim to realize globally optimal procurement based on our quality products principle, we focus on strengthening cooperation with suppliers and promoting CSR through our supply chain.

The Group promotes purchasing activities that are considerate of social issues such as human rights and the environment, and regarding concerns that mineral resources extracted from the Democratic Republic of the

Congo and surrounding nations are being used as a source of funds for armed insurgents, we recognize these mineral conflicts as a significant social issue in the course of resource and materials procurement.

Regarding the use of minerals from conflict zones, we implement surveys throughout the supply chain, and if such risks are discovered, we work to avoid using materials from those sources.

To our partners

We aim not just to engage in conventional cost management, but to conduct procurement activities that can make proposals and offer value through purchasing. CSR is one important element of value that a company can offer. Therefore, we produced the “CSR Procurement Guidelines,” and made an overall assessment of suppliers’ trends through a suppliers’ self-checklist, and provided feedback on the results. We aim to pave the way to continuous social progress through promoting CSR and mutual development together with our suppliers.

Environment



Basic Philosophy

Environmental issues are a common challenge for all mankind. Every member of the NGK SPARK PLUG Group will work towards reducing environmental burdens from our business activities as much as possible and developing and providing products and technologies that contribute to improving the environment. We will also endeavor to communicate in greater depth with our stakeholders including our local communities so that we may all work together to contribute to creating a sustainable society.

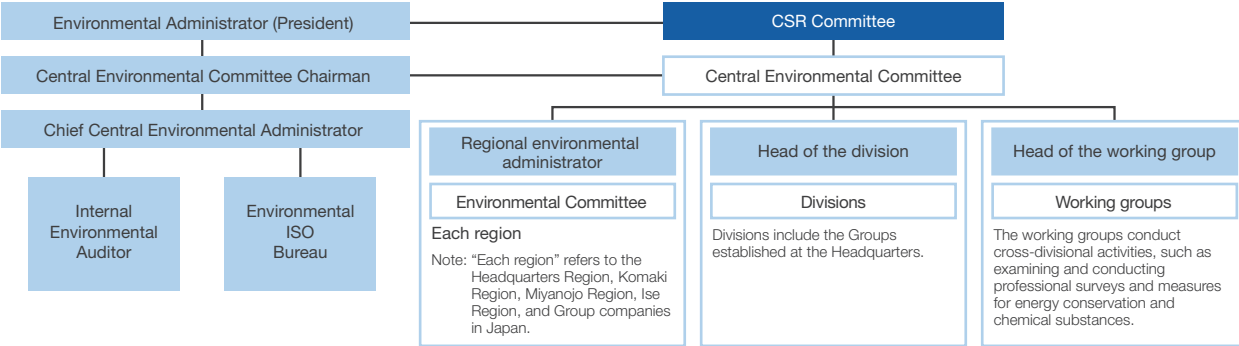
Global Eco Vision 2020

In our activities for environmental conservation, we set medium-term environmental targets. From the fiscal year ended March 31, 2017, we have drawn up a vision for our company and implemented activities under Global Eco Vision 2020.

We set four important environmental tasks, “Natural resources,” “Global warming,” “Toxic, hazardous chemicals” and “Key quality (development of environment-friendly products),” under Global Eco Vision 2020. By tackling these tasks through our business activities and on a foundation of “Education (raising consciousness of the environment),” “Compliance,” and “Open communication” we will work to enhance our manufacturing power, increase our brand value, and contribute to not only the sustainable development of our company, but of society, also.



Environmental activity promotion organizations



Environmental action plan

| Major item | Minor item | Target for the fiscal year ending March 31, 2021 | Result for the fiscal year ended March 31, 2018 |
|-----------------------------------|---------------|---|--|
| Global warming | Production | Reduce per-unit CO ₂ emissions by 5% relative to the fiscal year ended March 31, 2016 (Average yearly reduction of 1%) | Target: Reduce per-unit CO ₂ emissions by 1% relative to the fiscal year ended March 31, 2017 Result: Reduced the emissions by 7.3% relative to the fiscal year ended March 31, 2017 * Ongoing cross-departmental energy conservation activities under the leadership of the energy conservation working group * Promoted measures to reduce CO ₂ (equivalent to 1.8% of emissions) |
| | Logistics | Increase efficiency for logistics | Increased the efficiency of various activities accompanying logistics |
| Depletion of resources | Waste | Reduce defective products to reduce waste | Reduced waste by reducing defective products generated by different processes |
| | | Design products in consideration of waste reduction | Implemented initiatives to limit waste by improving product structure, etc. |
| | Water | Use water more efficiently | * Reduced water use through business restructuring, etc. * Reduced water use by remodeling equipment and reviewing operational methods |
| | Raw materials | Design products in consideration of the saving of raw materials | Limited use of precious metals through replacement with resource-saving types |
| Environmentally-friendly products | — | Build an environment-friendly product certification system and expand the lineup of such products | Implemented measures to increase environment-friendly products |
| Hazardous chemical substances | — | Ensure compliance with ELV, RoHS, REACH and other regulations | Shared regulatory information across departments and made necessary responses to the regulations under the leadership of the chemical substances management working group |
| | — | Foster the replacement of substances of concern with substitutes | Replaced phthalic acid, whose use will be prohibited by RoHS in 2019, with a substitute |
| | — | Totally discontinue the use of HCFCs | Upgraded fluorocarbon R-22 air conditioners |

Environmental Burdens from Business Activities (Fiscal year ended March 31, 2018)

| INPUT | | Scope covered ¹⁾ | | |
|---------------------|--|-----------------------------|--|---|
| | | NGK SPARK PLUG | Group companies in Japan ²⁾ | Overseas companies in organizations ³⁾ |
| Raw materials | Ceramic and metal materials Ceramic and metal materials purchased | ○ | ○ | ○ |
| | 54,000 tons | | | |
| Energy | Electricity Used in offices and plants | ○ | ○ | ○ |
| | 449.86 million kWh | | | |
| | City gas Used in offices and plants | ○ | ○ | ○ |
| | 18.83 million m ³ | | | |
| | LPG Used in offices and plants and for testing, travel and transportation | ○ | ○ | ○ |
| | 7,692 tons | | | |
| | Other fuels Used in offices and plants and for testing, travel and transportation | ○ | ○ | ○ |
| | 1,008 kL (crude oil equivalent) | | | |
| | Renewable energy Generated by solar power generators and small hydroelectric generators | ○ | ○ | ○ |
| | 390,000 kWh | | | |
| Water | Tap water, well water Tap water and groundwater used | ○ | ○ | ○ |
| | 1.63 million m ³ | | | |
| Chemical substances | PRTR Handled and notified by sites | ○ | ○ | |
| | 865 tons | | | |
| Logistics | Fuels used for transportation (outsourced) Fuels used for transportation by trucks, ships, and aircraft | ○ | ○ | |
| | 926 kL (crude oil equivalent) | | | |
| | | | | |
| OUTPUT | | NGK SPARK PLUG | Group companies in Japan ²⁾ | Overseas companies in organizations ³⁾ |
| Output into waters | Wastewater Released into sewerage systems and public waters; output was deemed to be equivalent to the total volume of tap water and well water consumed. | ○ | ○ | ○ |
| | 1.63 million m ³ | | | |
| | Chemical substances (PRTR) Released into waters and notified by sites | ○ | ○ | |
| | 0.3 tons | | | |
| Output into air | GHG emissions GHG from energy use and non-energy use | ○ | ○ | ○ ⁴⁾ |
| | 320,000 tons-CO ₂ | | | |
| | Chemical substances (PRTR) Released into air and notified by sites | ○ | ○ | |
| | 138 tons | | | |
| Waste | Waste generated (and treated on commission) Total: 19,031 tons | | | |
| | Waste recycled (including waste sold) | ○ | ○ | ○ |
| | 16,900 tons | | | |
| | Sent to landfill or incinerated | | | |
| | 2,131 tons | | | |
| Logistics | CO ₂ emitted by external transporters CO ₂ emissions due to externally commissioned transportation | ○ | ○ | |
| | 2,465 tons-CO ₂ | | | |
| Product shipment | | | | |
| Customers | | | | |

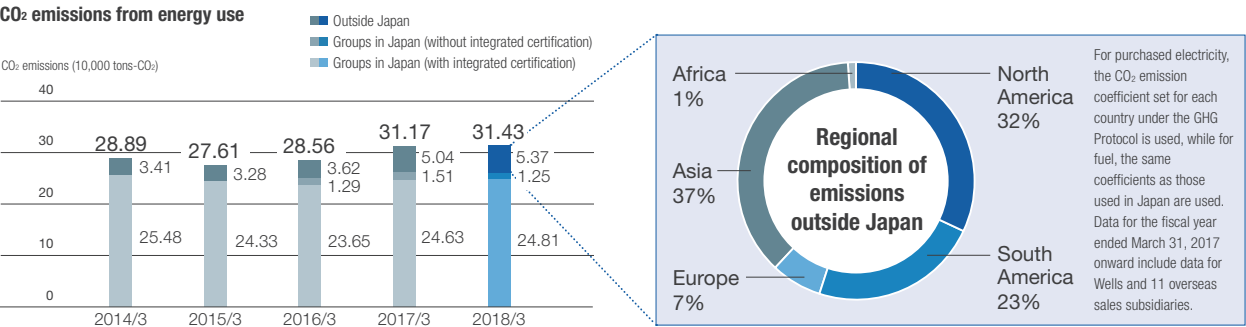
¹⁾ For each INPUT and OUTPUT amount, companies included in the scope of reporting are indicated with ○.
²⁾ Group companies in Japan: Nittoku Alpha Service Co., Ltd., Nittoku Unyu Co., Ltd., Ceramic Sensor Co., Ltd., NTK Ceramic Co., Ltd., CS Nakatsugawa Co., Ltd., Nansei Ceramic Co., Ltd., Kamioka Ceramic Co., Ltd., SparkTec WKS Co., Ltd., Nichiwa Kiki Co., Ltd., SparkTec TONO Co., Ltd., which have integrated certification; and Nittoku Denshi Co., Ltd. and NTK Ceratec Co., Ltd., which are outside of integrated certification.
³⁾ "Overseas organizations" refers to the following overseas manufacturing and sales organizations: NGK Spark Plug (Shanghai) Co., Ltd., Changshu NGK Spark Plug Co., Ltd., Woon Industry 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.; and to the following overseas sales organizations: 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., LLC NGK Spark Plugs (Eurasia), and NGK Spark Plug Middle East FZE.
⁴⁾ For overseas organizations, only CO₂ emissions from energy use are calculated.

Reducing CO₂ Emissions

During the fiscal year ended March 31, 2018, per-unit CO₂ emissions were 1.18 tons/million yen, marking an early achievement of the target of 1.23 tons/million yen (down 5% compared with the fiscal year ended March 31, 2016) as previously set forth in Global Eco Vision 2020.

This was primarily the result of previous energy conservation efforts in addition to the accumulated effects of energy conservation resulting from the business

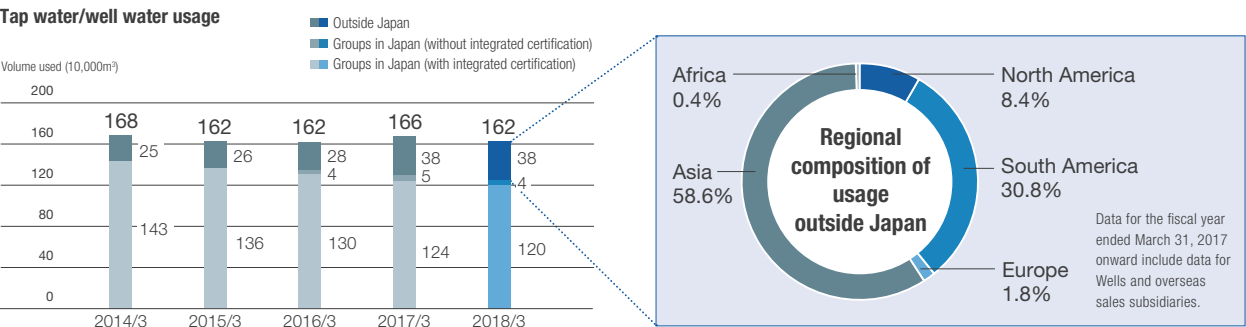
restructuring of spark plug production factories and semiconductor component-related factories.
Going forward, we will revise upward our Global Eco Vision 2020 targets, and with the objective of a 15% reduction in comparison to the fiscal year ended March 31, 2016 (1.10 tons/million yen), will move forward with additional energy conservation measures.



Promotion and Results of Efficient Water Use

Per-unit water usage during the fiscal year ended March 31, 2018 was 5.68m³/million yen, a 10.0% improvement compared to the fiscal year ended March 31, 2017.

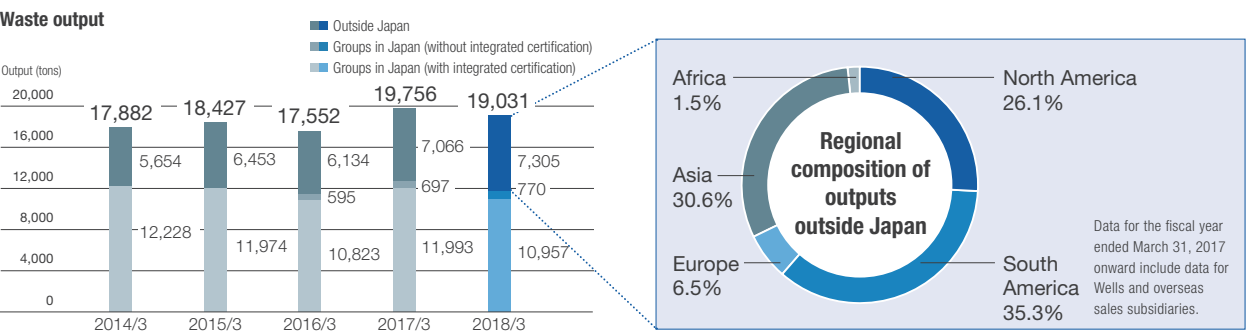
Primary reasons for the improvement in per-unit usage include a reduction in water usage as a result of the business restructuring of semiconductor component-related factories.



Promotion and Results of Reduction of Waste

Per-unit waste disposal during the fiscal year ended March 31, 2018 was 0.052 tons/million yen, a 15% improvement compared to the fiscal year ended March 31, 2017.
This was because we were able to limit the output of

certain types of high-volume waste through the business restructuring of spark plug production factories and semiconductor component-related factories, in addition to previous activities to reduce waste.



Meeting with Outside Directors

Creating a corporate culture that breeds

“innovation” and increasing corporate value

Q1 Do you think NGK SPARK PLUG progressing in relation to changing to a corporate culture that breeds innovation?

Otaki: NGK SPARK PLUG has been producing amazing products for over 80 years.

However, although timespan for change is short at so-called BtoC companies, making it easy to create innovation, it is certain that innovation is harder to come by at BtoB companies. Although there are many issues that we must still overcome in relation to “establishing new business pillars,” one of the basic policies of the medium-term management plan, I feel that the seeds are steadily beginning to grow.

Tamagawa: I believe that the core ceramics technologies are amazing.

However, initiating challenges into completely new fields takes time, and in addition, we must change any parts of our culture that prevent us initiating challenges. There will be attempts made in many fields over a long time span, and a tolerant foundation must be made that will accept failure in order to achieve success. Not failure without trying, but what is important is to just try different things, and in this aspect, there is still progress to be made at the company.

Yasui: When thinking about society 20 or 30 years from now, I think it is important that we consider the future of the company with an awareness of what sort of innovation NGK SPARK PLUG should create and how our technology will be

necessary for that innovation. For example, the “Sharing Factory” company was launched this spring from an employee’s idea. Although I don’t believe that this business is thought to become a future mainstay of our company, I do feel that this is likely a manifestation of management seeking out awareness reforms on the employee level.

Otaki: The significant strengthening of the Strategic Human Resources Department beginning this year is one initiative to allow us to respond to large waves of future change. Last year, I participated as a lecturer in the “HAGI Project,” which aims to develop next-generation talent, and participants were selected with a global perspective and were full of ambition. I felt that the company was shifting gears toward utilizing personnel globally, and also felt the company’s desire to actively foster personnel that would act as leaders both inside and outside Japan.

Yasui: As the ratio of overseas production will only continue to rise, human resources must be thought of on a global level. Until now, no clear development program had been established with regard to developing successors, but now we have clearly established a program and made efforts to implement a strategic response. This is a point that makes me feel that the corporate culture is changing. I can feel a strong desire from the management layer to effect changes in the company.

Otaki: When I was first appointed five years ago, there wasn’t a strong desire to acquire personnel from outside the company, and frameworks were lacking for the utilization of

mid-career hires. However, frameworks were established two or three years ago, and they are now beginning to bear fruit. To further accelerate innovation, I think that we will need personnel such as external personnel that are not tied down to the “NGK SPARK PLUG” ways of thinking, or personnel with abundant knowledge of unknown new areas. I hope that these frameworks can be used moving forward to advance “diversity.”

Tamagawa: When I was first appointed, I felt that there were issues in the human asset aspect. However, projects to encourage the active participation of women are being implemented, for example, and I feel that the development of personnel to support innovation is slowly progressing. I recognize that human asset strategy from a diversity viewpoint is a very important issue moving forward with respect to innovation.

Q2 Compared with the previous year, how active are Board meetings?

Yasui: I think that discussions are active. Discussions in recent meetings of the Board of Directors have strongly reflected the company’s circumstances as they have frequently centered on topics such as the future direction of the automotive components business and investment in new businesses, and in my opinion, the discussion views have shifted to a more long-term focus.

Otaki: Of the over 80 years of the company’s history, M&A only began about five years ago, and when considering the business scope, I think that this is a rarity. However, since then, discussions revolving around M&A that look to the future of the company have been made continuously, and I feel that speedy discussions have been made.

Tamagawa: In M&A, regarding investment decisions and keeping track of conditions after the investment, I sometimes think that we must create more structures and rules; I feel that providing input as an outside director, taking such things into account, is necessary for the future growth of the company.

Q3 What are you doing as outside director to improve the company’s corporate value? Please tell us what you keep in mind when performing your role in supporting NGK SPARK PLUG’s challenges.

Otaki: To increase corporate value over the long term, we must create new businesses. Of course, new businesses require new investment, and as our company is not alone in fearing the uncertainty of the future, sometimes investments are canceled, or the scale is toned down. During such times, it’s necessary to make committed decisions. To ensure that the company can challenge new businesses

and increase its corporate value, I will continue to comment as an outside director.

Yasui: Although our company tends to be seen as “conservative,” I feel that it was a “company that is tolerant of failure.” I think that is precisely the reason why we have been able to build our current position in the automotive components business. However, as the organization slowly grew bigger, it might have become slightly conservative. I think losses are inevitable from investments in new businesses, but I think it is important for managers to show leadership to ensure that this does not cause our ambition to face challenges to fade. As an outside director, I hope to contribute to supporting new businesses.

Tamagawa: As an accountant and as a business owner as well, I have come across many different companies. Even if the management spirit is the same, outside directors will see things from varying fundamental viewpoints. I feel that my role is to express my own views to enable the other managers to see diverse ways of thinking and notice different things.

Q4 As an outside director, what hopes do you have for NGK SPARK PLUG, and what are its issues?

Yasui: I think that in future, a greater sense of speed will be required in both new and existing businesses, and therefore, I hope that things will move forward without becoming overly satisfied with the present.

Otaki: I think that, however small, we should create a profitable new business, even if it is just one. That is my hope, and I feel contributing to it is my role and task.

Tamagawa: What I feel to be amazing about working with NGK SPARK PLUG is that we invest in profitable areas in a reliable, timely manner. From here on, some information that indicates that the plugs and sensors business will see its peak in future, I hope that we will maintain our tenacity as we also actively focus on new businesses.



Management System (As of June 26, 2018)

Directors

Representative Director and Chairman of the Board
Chief Executive Officer
President Officer



Shinichi Odo

April 1977 Joined our company
July 2005 President, NGK SPARK PLUGS (U.S.A), INC.
June 2007 Member of the Board, NGK SPARK PLUG CO., LTD.
June 2010 Managing Director, Member of the Board
June 2011 President
April 2012 President & CEO
April 2016 Representative Director and Chairman of the Board
Chief Executive Officer
President Officer (up to today)

Representative Director and Vice President Officer
Internal Auditing Office, overall control of
Corporate Strategy Group and Engineering
R&D Group



Teppei Okawa

April 1981 Joined our company
February 2011 General Manager, Procurement Group Procurement Dept.
June 2011 Member of the Board
April 2012 Corporate Officer, Member of the Board
June 2012 Corporate Officer
June 2013 Corporate Officer, Member of the Board
April 2014 Managing Officer, Member of the Board
April 2015 Senior Managing Officer, Member of the Board
April 2016 Representative Director
Vice President Officer (up to today)

Member of the Board
Senior Managing Officer
In charge of Div. Business Planning
management Division



Takeshi Kawai

April 1987 Joined our company
February 2011 General Manager, Sensor Engineering Dept. II,
Automotive Components Group Sensor Div.

April 2012 Corporate Officer
April 2015 Managing Officer
June 2015 Managing Officer, Member of the Board
April 2016 Member of the Board, Senior Managing Officer (up to today)

Member of Board
Corporate Officer
Corporate Strategy Group



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., NGK SPARK PLUG CO., LTD.
April 2016 Corporate Officer (up to today)
June 2017 Member of the Board (up to today)

Member of Board
Managing Officer
Engineering R&D Group



Takio Kojima

April 1984 Joined our company
February 2011 General Manager, Next Generation Product Project,
Product Planning Center, Engineering R&D Group

April 2012 General Manager, Next Generation Product Project,
New Business Advancement Group

October 2013 General Manager of R&D Center, Engineering R&D Group
April 2014 Corporate Officer
April 2018 Managing Officer (up to today)
June 2018 Member of the Board (up to today)

Member of Board
Managing Officer
Automotive Components Sales & Marketing
Division



Toru Matsui

April 1984 Joined our company
April 2011 President, NGK SPARK PLUG EUROPE GmbH
October 2013 General Manager, OEM Sales & Marketing Dept., Sales and Marketing
Div., Automotive Components Group, NGK SPARK PLUG CO., LTD.

December 2014 President of NGK SPARK PLUG (SHANGHAI) CO., LTD.
April 2015 Corporate Officer, NGK SPARK PLUG CO., LTD.
July 2016 President, NGK SPARK PLUG (SHANGHAI) TRADING CO., LTD.
April 2018 Managing Officer, NGK SPARK PLUG CO., LTD. (up to today)
June 2018 Member of the Board (up to today)

Member of Board
Corporate Officer
Secretarial Office, Corporate Administration
Group, Nagoya Factory Manager



Kenji Isobe

April 1986 Joined our company
July 2011 General Manager, Accounting & Finance Dept.
April 2013 General Manager, Corporate Planning Dept. and Public Relations Office
December 2015 General Manager, Accounting & Finance Dept.,
Corporate Administration Group and General Manager, Public Relations Office
April 2016 Corporate Officer (up to today)
June 2018 Member of the Board (up to today)

Outside Directors

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, 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. (up to today)

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, KPMG AZSA LLC
June 2008 Representative Partner, Executive Director,
Head of Nagoya Office, KPMG AZSA LLC

July 2013 Head of the Office, Yasui Certified Public Accountant (up to today)
June 2014 Member of the Board, NGK SPARK PLUG CO., LTD. (up to today)

Member of the Board (Outside Director)



Megumi Tamagawa

August 1990 Registered as a Certified Public Accountant
February 1991 Joined BDO Toyo & Co.
December 2000 Manager, Accounting Department,
Japan Branch, General Electric International Inc.

October 2004 Joined MARUYAHONSYA Co., Ltd.
March 2006 Representative Director, MARUYAHONSYA Co., Ltd.
March 2016 Member of the Board, MARUYAHONSYA Co., Ltd. (up to today)
June 2016 Member of the Board, NGK SPARK PLUG CO., LTD. (up to today)

Audit & Supervisory Board Members

Audit & Supervisory Board Member, Standing



Fumio Mizuno

April 1981 Joined our company
February 2006 General Manager, Semiconductor Components Div. Production Dept.
Sec. I Communication Media Components Group

June 2009 General Manager, Production Dept. Ceramic Package Div.
Communication Media Components Group

April 2011 President, NTK CERAMIC CO., LTD.
July 2011 Senior General Manager, NGK SPARK PLUG CO., LTD.
April 2013 Vice Senior General Manager, Technical Ceramics Group Semiconductor Div.
June 2015 Audit & Supervisory Board Member, Standing (up to today)

Audit & Supervisory Board Member, 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



Fumiko Nagatomi

April 1981 Registered as an attorney, Joined Hachisuka Law Firm
April 1989 Opened Nagatomi Law Firm (up to today)
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. (up to today)
June 2018 Audit & Supervisory Board Member, NGK SPARK PLUG CO., LTD.
(up to today)

Corporate Officers

Senior Managing Officer

Takahiro Suzuki

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



Senior Managing Officer

Yoshitaka Narita

Overall control of PAMA region
President of NGK SPARK PLUGS (U.S.A.) HOLDING, INC.
President of NGK SPARK PLUGS (U.S.A.), INC.
President of NTK TECHNOLOGIES, INC.



Senior Managing Officer

Kozo Amano

Overall control of Marketing Div.
Cutting Tools Div.
Overall control of Business Development Div.
Medical Div.



Managing Officer

Noboru Ishida

Product Technology Div.
Overall control of Facility Engineering Div.
Corporate Quality Management Div.
Fuel Cell Div.
Komaki Factory Manager



Managing Officer

Kozo Yamasaki

President of NTK CERAMIC CO., LTD.



Corporate Officer

Nobuyuki Tokioka

AEC Div.



Corporate Officer

Yoshihiro Matsubara

Facility Engineering Div.
Corporate Quality Management Div.



Corporate Officer

Yutaka Tanaka

Sensor Div.
Glow Plug Div.



Corporate Officer

Masato Taniguchi

Marketing Div.
Business Development Div.



Corporate Officer

Masaki Sumiya

In charge of EMEA region
President of NGK SPARK PLUG EUROPE GmbH



Corporate Officer

Hiroyuki Maeda

SCM Div.
Procurement Div.



Corporate Officer

Hiroyuki Tanabe

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



Corporate Officer

Hiroyasu Ogura

In charge of ASEAN & India region
President of NGK SPARK PLUGS (THAILAND) CO., LTD.
President of SIAM NGK SPARK PLUG CO., LTD.
President of NGK SPARK PLUGS (ASIA) CO., LTD.



Corporate Officer

Akiyoshi Kato

Spark Plug Div.



Corporate Officer

Koji Suzuki

Automotive Component Sale & Marketing Div.



Corporate Officer

Yoshiyuki Takayanagi

Medical Div.



(Corporate Officers who do not concurrently serve as Directors)

Basic Philosophy

We believe that it is our foundational and important managerial task to establish and maintain a fair and efficient management system, while securing soundness and transparency in management, in order to enhance corporate value by fulfilling our corporate social responsibilities. We will enhance our corporate governance to ensure the efficiency and soundness of our corporate activities in line with our corporate philosophy, thereby fulfilling our responsibilities to our stakeholders.

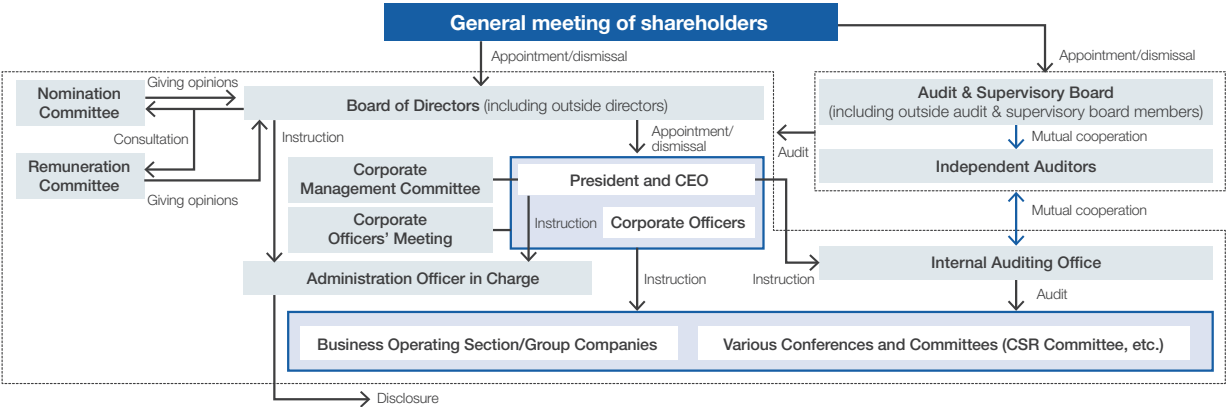
Corporate Governance System

We choose to have an Audit & Supervisory Board, who audit our directors objectively from an independent position. We have also separated the managerial decision-making and supervision function from the business execution function by introducing the corporate officer system. In the fiscal year ended March 31, 2018, the Board of Directors met 14 times. As for decision-making, the Board of Directors makes decisions on the most important matters for management,

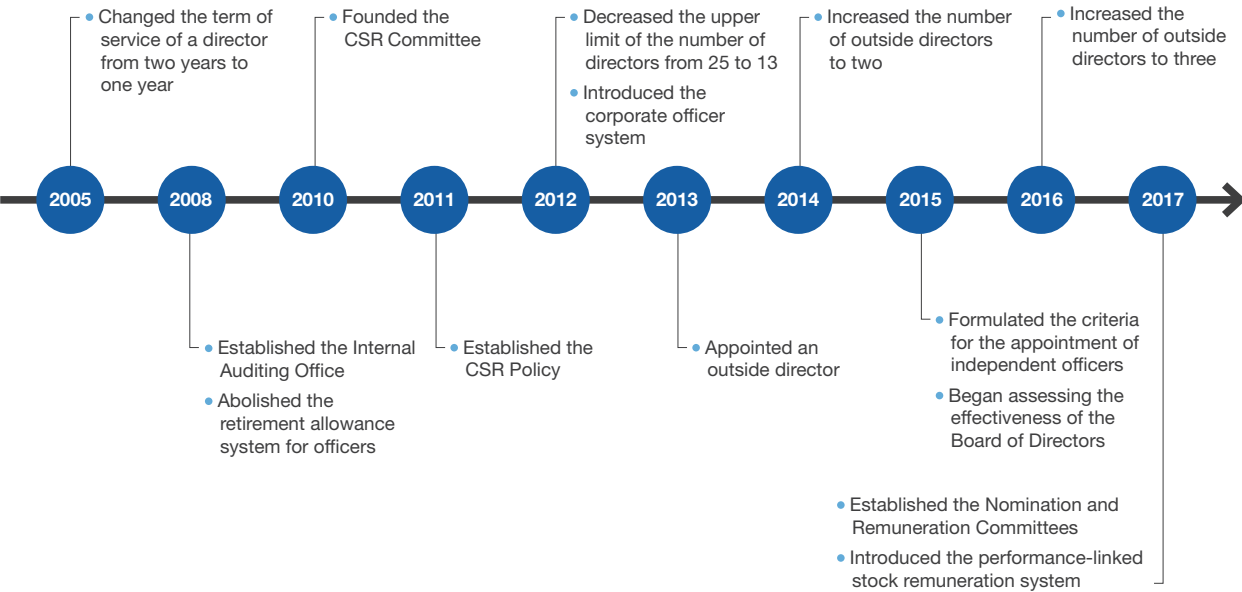
while decisions on other matters are made by the Corporate Management Committee and others for greater speed in decision-making.

We also appoint three outside directors and two outside audit & supervisory board members with an eye to introducing independent external viewpoints to enhance the supervision function and ensure transparency in management.

Corporate governance system



Chronological table of measures taken for corporate governance



Board of Directors

The Board of Directors of the company is composed of 10 directors, 3 of whom are outside directors.

Meetings of the Board of Directors are held regularly once a month as well as whenever necessary for deliberation and determination with respect to issues as prescribed in applicable laws and regulations or articles of incorporation as well as other key managerial issues, and also for supervision of business execution status in response to reports from the directors.

In addition, a Nomination Committee, whose membership includes outside directors, was established in April 2017 as an advisory body to the Board of Directors.

To ensure reasonableness and transparency, decisions regarding candidate nominations for the directors shall be made by the Board of Directors following deliberations by the Nomination Committee for submission to the General Meeting of Shareholders. The term of office of directors is one year.

Decisions regarding candidate nominations for the audit & supervisory board members shall be made by the Board of Directors with the consent of the Audit & Supervisory Board, following deliberations by representative directors for submission to the General Meeting of Shareholders.

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 broader view at important meetings, including the Board of Directors meetings. Outside audit & supervisory board members play auditing functions by drawing on their expertise to carry out audits from multifaceted viewpoints and express their opinions at important meetings including the 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

| 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 12 of the 14 Board of Directors meetings held during the term ^{*1} . |
| 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 of the 14 Board of Directors meetings held during the term ^{*1} . |
| Outside director | Megumi Tamagawa | She is expected to make a range of recommendations by drawing upon her wealth of experience as an executive in a different industry as well as the expertise developed as a certified public accountant. | At tended all of the 14 Board of Directors meetings held during the term ^{*1} . |
| Audit & supervisory board member | Kenichi Masuda ^{*2} | He has served as a director at financial institutions and is expected to use his abundant expertise and knowledge regarding finance and corporate management for the benefit of the company. | Attended 13 of the 14 Board of Directors meetings held during the term ^{*1} . |
| 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 all of the 10 Board of Directors meetings held during the term since her appointment to the position of outside audit & supervisory board member on June 29, 2017. |
| Audit & supervisory board member | Akihiko Minato ^{*3} | 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. | |

^{*1} Fiscal year ended March 31, 2018
^{*2} Mr. Kenichi Masuda resigned from his position as outside audit & supervisory board member on June 26, 2018.
^{*3} Mr. Akihiko Minato assumed his position as outside audit & supervisory board member on June 26, 2018.

Compensations for Directors and Corporate Officers

Director and corporate officer remuneration is determined by the Board of Directors based on deliberations regarding the responsibilities and performances of each director and corporate officer by the Remuneration Committee, which was established in April 2017 as an advisory body to the Board of Directors and whose membership includes outside directors.

We also introduced a performance-linked and highly transparent and objective stock remuneration system for directors and corporate officers in June 2017, aiming to make our executives more aware of their roles in improving the company's medium- to long-term business performance and contributing to an increase in corporate value.

Evaluation of the Effectiveness of the Board of Directors

The company conducted an evaluation of the effectiveness of the Board of Directors. An overview of this evaluation for the fiscal year ended March 31, 2018 is as follows:

1

Method of evaluation
Evaluation 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. The reasons thereof are as follows:
1) The composition of the Board of Directors includes a sufficient percentage of independent outside directors, and constructive discussions take place.
2) Revisions have been made to the agenda items of Board of Directors meetings, and efforts are being made to make discussions at meetings of the Board of Directors more effective and make deliberations regarding important management issues more adequate.
3) A framework for promoting constructive dialogue with shareholders has been established appropriately and is functioning properly. Furthermore, the following issues were also identified as items that it is hoped will be implemented in order to further enhance the effectiveness of the Board of Directors:
1) Further improvement shall be made to the content and volume of the materials for the meetings of the Board of Directors to increase efficiency.
2) Enhanced orientation and training shall be provided for acquiring knowledge required of directors.
3) A remuneration scheme for the management team shall be considered reflecting short-term and long-term targets in a balanced way.

Audit & Supervisory Board Members and Measures to Strengthen Their Functions

The Audit & Supervisory Board of the Company is composed of 4 audit & supervisory board members, 2 of whom are outside audit & supervisory board members. Timely and appropriate opinions are expressed from outside perspectives. No outside audit & supervisory board members have interests such as engaging in transactions with the company and/or belong to any organizations that have such interests.

Furthermore, in accordance with a request from the audit & supervisory board members, one staff member is appointed to support the operations of the Audit & Supervisory Board, and this staff member engages in internal communication, investigation, and other supporting operations. In addition, members of 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 Auditing System

Our Internal Auditing Office performs audits of NGK SPARK PLUG and its Group companies as an independent department, reports the results to management, and makes proposals to the audited companies on improvements regarding the identified problems. Departments that receive such proposals formulate and implement improvement plans, and the Internal Auditing Office monitors and checks the implementation status. To ensure the reliability of financial reporting, the Office assesses the effectiveness of internal control over financial reporting based on the internal control reporting system set pursuant to the Financial Instruments and Exchange Act of Japan.

The Internal Auditing Office works to improve the effectiveness of internal audits by exchanging views on each of the audit plans and results with audit & supervisory board members and/or independent external auditors regularly or as required.

Dialogue with Investors

We aim to enhance corporate value by disclosing information to investors in an open, fair manner, and thereby enhancing understanding of the company. We shall continue endeavoring to appropriately distribute information and enhance the quality of communication.



CSR Management

Basic Philosophy

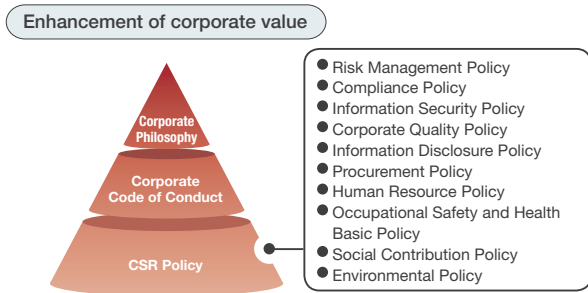
Our CSR

We view CSR not just as a responsibility but as an opportunity to be accountable through review of the NGK SPARK PLUG Group's economic, environmental and social activities from a global perspective, to enhance corporate value, and to contribute to the sustainable development of society in accordance with our Corporate Philosophy.

Our CSR activities are wide-ranging and diverse, and to provide our Group's action guidelines for fulfilling CSR, we established the CSR Policy in April 2011, which comprises 10 policies, such as the Compliance Policy and others. In line with the CSR Policy, we review and promote CSR based on a multifaceted approach.

Our CSR Philosophy and Policy

We act based on our Corporate Code of Conduct and our CSR Policy in order to realize our Corporate Philosophy.



Participation in the United Nations Global Compact

The NGK SPARK PLUG Group participated in the United Nations Global Compact in November 2016.

The Global Compact is an initiative proposed in 1999 by then Secretary-General of the United Nations Kofi Annan to address various issues facing the world, such as global warming, environmental problems and disparities in society. It was established formally at the UN headquarters in July 2000 as a set of voluntary action principles to be followed by companies.

The NGK SPARK PLUG Group will support the Global Compact's 10 principles set in four fields (human rights, labor, environment and anti-corruption) and conduct activities to contribute to building a sustainable society.



Contribution to SDGs

NGK SPARK PLUG shall focus on achieving the Sustainable Development Goals (SDGs) adopted by the UN in 2015.



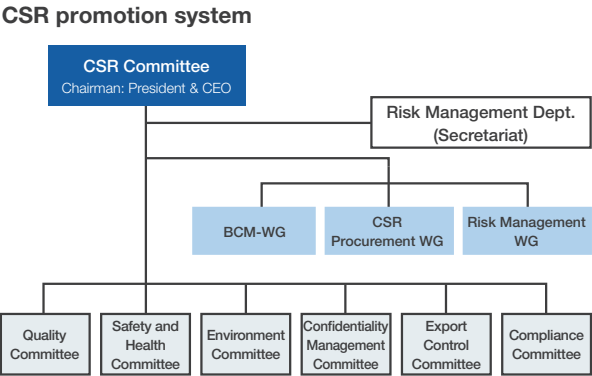
About Sustainable Development Goals (SDGs)
SDGs are a set of 17 goals and 169 targets for creating a sustainable world by 2030 that were adopted at a UN summit, and they aim to resolve shared global problems and issues, including poverty and inequality, and climate change, etc. with the objective that "not a single person on earth will be left behind."

CSR Promotion System

As well as determining each year's key tasks for implementation of the CSR Policy, the CSR Committee oversees and evaluates the CSR-related activities implemented by the respective task force committees and divisions, and makes proposals regarding them, in order to achieve total optimization of CSR activities, thereby strengthening the business foundation.

Working groups are established as necessary to discuss specific themes and develop countermeasures.

Through close collaboration among the CSR Committee, the task force committees, and working groups, a company-wide CSR promotion system is put in place.



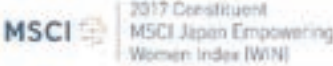
Communication with Stakeholders

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

| Stakeholders | Communication |
|----------------------------|---|
| Shareholders and investors | In addition to meeting the legal standards of information disclosure, we disclose information through various media and promptly release information on our website. |
| Customers | To ensure that our customers purchase and use our products and services with peace of mind, we offer information on our website, exhibitions, etc. from a customer-oriented point of view. |
| Suppliers | In order to establish healthy partnerships with our suppliers and ensure mutual growth, we hold corporate policy briefings and conduct other activities through our supply chain system. |
| Local communities | We respect local culture and customs in our sites established in respective regions in the world and engage in smooth communication with local communities, while also aiming to build a comfortable society as a member of those communities and striving to participate in various activities that contribute to society. |
| Employees | To provide employees with safe and sound workplaces where they can work hard and make a meaningful contribution, the management team proactively visits individual workplaces and talks with workers on-site. |

Inclusion in SRI Indexes

The NGK SPARK PLUG Group is a member of the following indexes related to SRI (socially responsible investing):



Compliance and Risk Management



Compliance

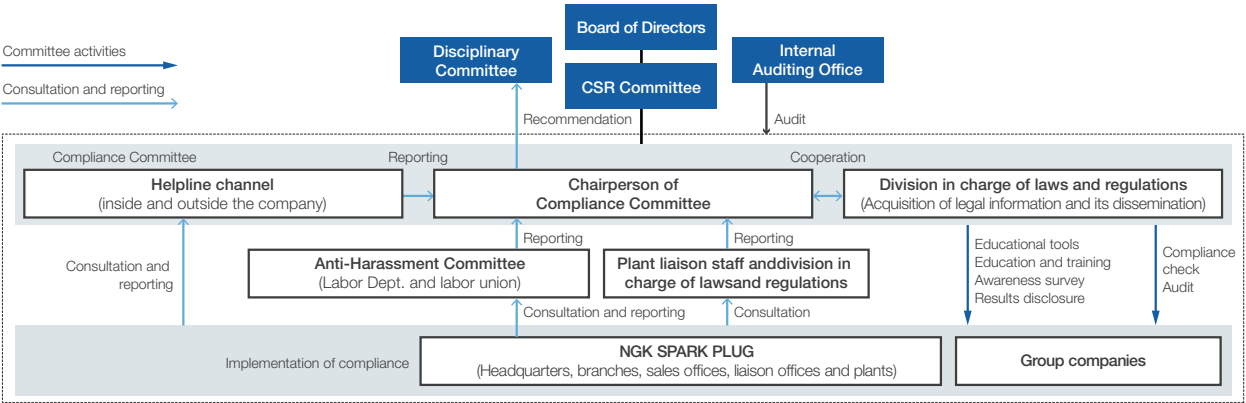
Basic Philosophy

We work to increase awareness among employees regarding compliance to act in a socially sensible manner, helping them to bear in mind that our enterprise is a member of society.

Compliance Promotion

The Compliance Committee, headed by the Representative Director and made up of representatives of the departments in charge of legal and regulatory matters and of the divisions, meets every three months to monitor and make corrections on key issues and actions concerning them. To raise employees' awareness of compliance, we provide ongoing education and edification, using the Compliance Guidebook, which provides information on rules in the company and society, and the Compliance Newsletter, which gathers examples of cases that could occur in an everyday setting. In particular, taking the antitrust law (the Antimonopoly Act of Japan) violation that we were confronted with in fiscal 2014 seriously, we have been implementing a program to prevent the recurrence of similar problems, specifically by appointing a director in charge of compliance and founding a team specializing in antitrust law-related issues and legal compliance.

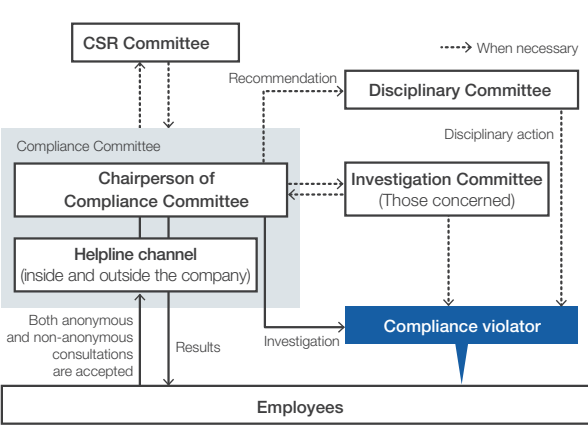
Compliance promotion system



Corporate Ethics Helpline

The Corporate Ethics Helpline is an internal reporting system available to employees seeking consultation regarding compliance. We have worked to increase user convenience by establishing channels not only inside the company but also via an external expert service provider and enabling employees to seek consultation and make reports also outside of business hours and on holidays. Regarding consultations and reports received, facts are investigated with discretion so that the reporting employee is neither identified nor feels uncomfortable, and if problems are confirmed, they are dealt with promptly. There were 65 consultations and reports in the fiscal year ended March 31, 2018, including those from employees of Group companies. The numbers have been increasing year on year as a result of the permeation of compliance awareness throughout the workforce.

Flow after report is received via the Helpline



Risk Management

Basic Philosophy

We will build and operate a company-wide risk management system in order to strategically deal with risks against the background of a business environment that is becoming more complex and diversified. To this end, we will implement measures continuously and in an integrated manner in cooperation with our domestic and overseas Group companies.

Information Security

We have established the Group Information Security Regulations and Confidentiality Management Regulations, and strive for the appropriate protection and management of confidential information including personal information belonging to the NGK SPARK PLUG

Group, our customers and our suppliers. When we use wireless LAN, mobile terminals and other electronic information devices, we give all possible consideration to information security while also ensuring compliance with the relevant laws and regulations.

Formulation of Various BCPs (Business Continuity Plans)

In preparation for various risks caused by large-scale disasters including earthquakes, we have been addressing the issue of BCM (Business Continuity Management) for continuing business operations while minimizing any damage that may be incurred. Especially for functions requiring prompt response in the event of a disaster, such as business departments, IT, and procurement, contingency frameworks

and handling procedures are specified in BCPs (Business Continuity Plans), clarifying the time-limit and the target state. We conduct training to disseminate and confirm the effectiveness of the formulated BCPs annually, and issues that come to light, as well as the degree of improvement in the plans' effectiveness, are confirmed by the CSR Committee to be addressed and reviewed.

Preparation against Large Earthquakes

We restructure the plants of Group companies in consideration of damage that might be inflicted by large earthquakes in the future. We also set out the initial responses to be made and measures to be taken to ensure business continuity in the event of a large earthquake in our guidelines on business continuity plans (BCPs) against earthquakes. Guidelines on initial responses include those on employees' actions, such as evacuation and safety reporting, and on emergency

headquarters, internal firefighting teams and reserves. Every November, our plants, sales offices and Group companies in Japan concurrently hold evacuation drills, which include the examination of the guidelines. Guidelines on BCPs include those on the time required for the recovery of important operations, recovery plans, organization of recovery teams and the implementation of BCPs. We hold BCP drills in December every year, as part of efforts to enhance the effectiveness of business continuity plans.

Financial Results Highlights for the Past 11 Years

| | 2008/3 | 2009/3 | 2010/3 | 2011/3 | 2012/3 | 2013/3 | 2014/3 | 2015/3 | 2016/3 | 2017/3 | 2018/3 |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Net sales | 345,584 | 292,121 | 243,914 | 269,232 | 284,746 | 302,798 | 329,758 | 347,636 | 383,272 | 372,919 | 409,912 |
| Operating income (loss) | 35,039 | (5,222) | 10,683 | 28,770 | 24,478 | 23,754 | 51,661 | 62,196 | 66,284 | 53,595 | 67,279 |
| Ordinary income (loss) | 34,938 | (7,528) | 10,758 | 27,379 | 23,740 | 27,674 | 54,960 | 67,907 | 64,483 | 55,559 | 69,094 |
| Profit (loss) attributable to owners of the parent | 22,144 | (71,669) | 13,509 | 23,680 | 25,524 | 20,909 | 32,704 | 36,753 | 30,815 | 25,602 | 44,335 |
| Capital expenditures | 63,231 | 24,173 | 10,977 | 8,767 | 14,004 | 24,012 | 41,034 | 36,372 | 45,339 | 36,328 | 37,591 |
| Depreciation | 25,474 | 31,767 | 18,825 | 16,646 | 15,438 | 12,798 | 11,567 | 13,337 | 16,834 | 19,601 | 20,920 |
| R&D expenses | 17,444 | 17,575 | 13,907 | 15,763 | 16,036 | 17,100 | 19,400 | 21,337 | 23,123 | 23,416 | 25,283 |
| Cash flows from operating activities | 37,728 | 36,603 | 34,255 | 35,398 | 21,079 | 26,194 | 54,697 | 36,593 | 56,465 | 49,764 | 65,707 |
| Cash flows from investing activities | (43,820) | (27,153) | (17,270) | (20,412) | (15,850) | (15,442) | (61,148) | (12,865) | (82,331) | (53,410) | (26,422) |
| Free cash flows | (25,520) | 3,820 | 27,834 | 30,684 | 8,507 | 8,456 | 3,541 | 13,995 | (25,866) | 6,335 | 29,636 |
| Dividend payout | 5,917 | 2,941 | 2,396 | 4,791 | 4,789 | 4,788 | 6,093 | 7,834 | 9,140 | 8,942 | 12,676 |
| Net assets | 288,299 | 184,384 | 207,006 | 218,159 | 235,613 | 268,309 | 302,793 | 343,380 | 341,044 | 354,710 | 388,115 |
| Total assets | 412,150 | 275,995 | 331,476 | 337,318 | 340,295 | 366,489 | 458,148 | 485,497 | 526,103 | 563,801 | 607,769 |
| Interest bearing debt | 37,289 | 37,042 | 39,814 | 36,697 | 37,399 | 27,418 | 57,339 | 46,153 | 80,212 | 99,275 | 98,115 |

| | | | | | | | | | | | |
|-----------------------------|----------|----------|--------|--------|----------|----------|----------|----------|----------|----------|----------|
| Earnings (losses) per share | 100.93 | (328.90) | 62.01 | 108.71 | 117.25 | 96.06 | 150.26 | 168.88 | 141.60 | 119.44 | 209.37 |
| Net assets per share | 1,312.72 | 838.11 | 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 |
| Cash dividends per share | 27.00 | 13.50 | 11.00 | 22.00 | 22.00 | 22.00 | 28.00 | 36.00 | 42.00 | 42.00 | 60.00 |

| | | | | | | | | | | | |
|---------------------------------------|------|--------|------|------|------|------|------|------|------|------|------|
| Operating income ratio (%) | 10.1 | (1.8) | 4.4 | 10.7 | 8.6 | 7.8 | 15.7 | 17.9 | 17.3 | 14.4 | 16.4 |
| Return on net sales (%) | 6.4 | (24.5) | 5.5 | 8.8 | 9.0 | 6.9 | 9.9 | 10.6 | 8.0 | 6.9 | 10.8 |
| Gross profit on sales (%) | 24.1 | 13.8 | 21.0 | 27.4 | 25.1 | 24.2 | 32.6 | 35.8 | 35.6 | 33.0 | 34.6 |
| ROE (Return on equity) (%) | 7.7 | (30.6) | 7.0 | 11.2 | 11.3 | 8.4 | 11.5 | 11.4 | 9.1 | 7.4 | 12.0 |
| ROA (Return on assets) (%) | 5.4 | (20.8) | 4.4 | 7.1 | 7.5 | 5.9 | 7.9 | 7.8 | 6.1 | 4.7 | 7.6 |
| ROIC (Return on invested capital) (%) | 7.8 | (1.3) | 3.2 | 8.0 | 6.5 | 5.8 | 11.0 | 11.6 | 11.4 | 8.5 | 10.0 |
| Equity ratio (%) | 69.4 | 66.2 | 61.9 | 64.2 | 68.8 | 72.7 | 65.6 | 70.2 | 64.4 | 62.5 | 63.5 |
| Total asset turnover (times) | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 0.7 | 0.8 | 0.7 | 0.7 |
| Dividend payout ratio (%) | 26.8 | — | 17.7 | 20.2 | 18.8 | 22.9 | 18.6 | 21.3 | 29.7 | 35.2 | 28.7 |

Consolidated Balance Sheets

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
March 31, 2018 and 2017

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Assets | | | |
| Current assets | | | |
| Cash and deposits (Notes 7 and 9) | ¥ 56,235 | ¥ 45,733 | \$ 530,519 |
| Notes and accounts receivable - trade (Note 9) | 93,615 | 91,594 | 883,160 |
| Short-term investment securities (Notes 9 and 10) | 59,905 | 57,210 | 565,142 |
| Inventories (Note 3) | 94,953 | 86,857 | 895,783 |
| Deferred tax assets (Note 13) | 12,427 | 11,023 | 117,236 |
| Other | 15,076 | 14,614 | 142,226 |
| Allowance for doubtful accounts | (751) | (463) | (7,085) |
| Total current assets | 331,463 | 306,570 | 3,127,009 |
| Noncurrent assets | | | |
| Property, plant and equipment | | | |
| Buildings and structures, net | 63,410 | 62,400 | 598,208 |
| Machinery, equipment and vehicles, net | 95,282 | 86,358 | 898,887 |
| Land | 21,279 | 19,659 | 200,745 |
| Construction in progress | 11,027 | 9,726 | 104,028 |
| Other, net | 4,101 | 3,156 | 38,689 |
| Total property, plant and equipment (Note 3) | 195,102 | 181,302 | 1,840,585 |
| Intangible assets | | | |
| Goodwill (Note 16) | 307 | 460 | 2,896 |
| Software | 4,567 | 4,005 | 43,085 |
| Other | 239 | 234 | 2,255 |
| Total intangible assets | 5,114 | 4,701 | 48,245 |
| Investments and other assets | | | |
| Investment securities (Notes 3, 9 and 10) | 71,680 | 68,252 | 676,226 |
| Deferred tax assets (Note 13) | 3,042 | 1,496 | 28,698 |
| Other | 1,487 | 2,000 | 14,028 |
| Allowance for doubtful accounts | (119) | (523) | (1,123) |
| Total investments and other assets | 76,090 | 71,226 | 717,830 |
| Total noncurrent assets | 276,306 | 257,230 | 2,606,660 |
| Total assets | ¥607,769 | ¥563,801 | \$5,733,670 |

See accompanying Notes to Consolidated Financial Statements.

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Liabilities | | | |
| Current liabilities | | | |
| Accounts payable - trade (Note 9) | ¥ 32,407 | ¥ 30,045 | \$ 305,726 |
| Short-term loans payable (Notes 9 and 20) | 10,113 | 11,259 | 95,406 |
| Current portion of bonds payable (Notes 9 and 20) | 25,000 | — | 235,849 |
| Current portion of long-term loans payable (Notes 9 and 20) | 9,962 | — | 93,981 |
| Lease obligations (Note 20) | 43 | 87 | 406 |
| Income taxes payable | 13,040 | 7,697 | 123,019 |
| Other | 39,641 | 36,486 | 373,972 |
| Total current liabilities | 130,208 | 85,577 | 1,228,377 |
| Noncurrent liabilities | | | |
| Bonds payable (Notes 9 and 20) | 30,000 | 55,000 | 283,019 |
| Long-term loans payable (Notes 9 and 20) | 22,886 | 32,848 | 215,906 |
| Lease obligations (Note 20) | 111 | 80 | 1,047 |
| Net defined benefit liability (Note 12) | 27,443 | 29,263 | 258,896 |
| Provision for stock benefits | 92 | — | 868 |
| Deferred tax liabilities (Note 13) | 7,967 | 5,324 | 75,160 |
| Other | 945 | 998 | 8,915 |
| Total noncurrent liabilities | 89,446 | 123,514 | 843,830 |
| Total liabilities | 219,654 | 209,091 | 2,072,208 |
| Net assets | | | |
| Shareholders' equity | | | |
| Common stock | 47,869 | 47,869 | 451,594 |
| Capital surplus | 54,639 | 54,825 | 515,462 |
| Retained earnings | 278,374 | 262,010 | 2,626,170 |
| Treasury stock | (6,422) | (17,649) | (60,585) |
| Total shareholders' equity | 374,461 | 347,056 | 3,532,651 |
| Accumulated other comprehensive income | | | |
| Net unrealized gains on available-for-sale securities | 31,211 | 27,580 | 294,443 |
| Foreign currency translation adjustments | (16,737) | (16,527) | (157,896) |
| Remeasurements of defined benefit plans (Note 12) | (3,273) | (5,804) | (30,877) |
| Total accumulated other comprehensive income | 11,200 | 5,249 | 105,660 |
| Noncontrolling interests | 2,454 | 2,404 | 23,151 |
| Total net assets | 388,115 | 354,710 | 3,661,462 |
| Total liabilities and net assets | ¥607,769 | ¥563,801 | \$5,733,670 |

Consolidated Statements of Income

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the Years Ended March 31, 2018 and 2017

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Net sales (Note 16) | ¥409,912 | ¥372,919 | \$3,867,094 |
| Cost of sales (Note 4) | 268,189 | 250,017 | 2,530,085 |
| Gross profit | 141,722 | 122,901 | 1,337,000 |
| Selling, general and administrative expenses | | | |
| Selling expenses | 33,377 | 25,252 | 314,877 |
| General and administrative expenses | 41,065 | 44,053 | 387,406 |
| Total selling, general and administrative expenses (Notes 4 and 12) | 74,442 | 69,306 | 702,283 |
| Operating income (Note 16) | 67,279 | 53,595 | 634,708 |
| Nonoperating income | | | |
| Interest income | 1,123 | 1,157 | 10,594 |
| Dividend income | 1,398 | 1,422 | 13,189 |
| Equity in earnings of associates | 510 | 604 | 4,811 |
| Other | 1,826 | 1,815 | 17,226 |
| Total nonoperating income | 4,858 | 4,999 | 45,830 |
| Nonoperating expenses | | | |
| Interest expense | 511 | 342 | 4,821 |
| Foreign exchange loss | 1,786 | 963 | 16,849 |
| Depreciation of idle property, plant and equipment | — | 201 | — |
| Other | 746 | 1,528 | 7,038 |
| Total nonoperating expenses | 3,043 | 3,036 | 28,708 |
| Ordinary income | 69,094 | 55,559 | 651,830 |
| Extraordinary income | | | |
| Gain on sale of noncurrent assets (Note 4) | 199 | 487 | 1,877 |
| Gain on sale of investment securities | 1,117 | — | 10,538 |
| Total extraordinary income | 1,316 | 487 | 12,415 |
| Extraordinary loss | | | |
| Loss on sale or disposal of noncurrent assets (Note 4) | 1,325 | 773 | 12,500 |
| Impairment loss (Note 4) | — | 20,187 | — |
| Loss on valuation of investment securities | 5 | 74 | 47 |
| Loss on violation of antitrust law | 3,987 | 77 | 37,613 |
| Settlement package | 4,434 | 99 | 41,830 |
| Environmental expenses | 559 | — | 5,274 |
| Total extraordinary loss | 10,312 | 21,212 | 97,283 |
| Profit before income taxes | 60,098 | 34,833 | 566,962 |
| Income taxes - current | 18,499 | 11,434 | 174,519 |
| Income taxes - deferred | (3,084) | (2,598) | (29,094) |
| Total income taxes (Note 13) | 15,415 | 8,836 | 145,425 |
| Profit | 44,683 | 25,997 | 421,538 |
| Profit attributable to: | | | |
| Noncontrolling interests | 347 | 394 | 3,274 |
| Owners of the parent | ¥ 44,335 | ¥ 25,602 | \$ 418,255 |

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statements of Comprehensive Income

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the Years Ended March 31, 2018 and 2017

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Profit | ¥44,683 | ¥25,997 | \$421,538 |
| Other comprehensive income: | | | |
| Unrealized gains on available-for-sale securities | 3,655 | 4,837 | 34,481 |
| Foreign currency translation adjustments | 16 | (1,007) | 151 |
| Remeasurements of defined benefit plans (Note 12) | 2,560 | 2,928 | 24,151 |
| Share of other comprehensive income of associates accounted for using equity method | (161) | 113 | (1,519) |
| Total other comprehensive income (Note 5) | 6,070 | 6,872 | 57,264 |
| Comprehensive income | ¥50,754 | ¥32,870 | \$478,811 |
| Comprehensive income attributable to: | | | |
| Owners of the parent | ¥50,286 | ¥32,492 | \$474,396 |
| Noncontrolling interests | 467 | 377 | 4,406 |

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statements of Changes in Net Assets

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the Years Ended March 31, 2018 and 2017

| | Shareholders' equity | | | | | Accumulated other comprehensive income | | | | | Noncontrolling interests | Total net assets |
|--|---------------------------|-----------------|-------------------|----------------|----------------------------|---|--|---|--|----------|--------------------------|------------------|
| | Common stock | Capital surplus | Retained earnings | Treasury stock | Total shareholders' equity | Net unrealized gains on available-for-sale securities | Foreign currency translation adjustments | Remeasurements of defined benefit plans | Total accumulated other comprehensive income | | | |
| | | | | | | | | | | | | |
| | Millions of yen | | | | | | | | | | | |
| Balance at April 1, 2016 | ¥47,869 | ¥54,824 | ¥245,463 | ¥ (7,647) | ¥340,510 | ¥22,733 | ¥(15,640) | ¥(8,734) | ¥ (1,640) | ¥2,174 | ¥341,044 | |
| Changes during the fiscal year | | | | | | | | | | | | |
| Dividends of surplus | | | (9,055) | | (9,055) | | | | | | (9,055) | |
| Profit attributable to owners of the parent | | | 25,602 | | 25,602 | | | | | | 25,602 | |
| Purchase of treasury stock | | | | (10,001) | (10,001) | | | | | | (10,001) | |
| Disposal of treasury stock | | 0 | | 0 | 0 | | | | | | 0 | |
| Net changes in items other than shareholders' equity | | | | | | 4,846 | (887) | 2,930 | 6,889 | 230 | 7,120 | |
| Total changes in items during the period | — | 0 | 16,546 | (10,001) | 6,545 | 4,846 | (887) | 2,930 | 6,889 | 230 | 13,665 | |
| Balance at March 31, 2017 | 47,869 | 54,825 | 262,010 | (17,649) | 347,056 | 27,580 | (16,527) | (5,804) | 5,249 | 2,404 | 354,710 | |
| Changes during the fiscal year | | | | | | | | | | | | |
| Dividends of surplus | | | (10,823) | | (10,823) | | | | | | (10,823) | |
| Profit attributable to owners of the parent | | | 44,335 | | 44,335 | | | | | | 44,335 | |
| Purchase of treasury stock | | | | (5,922) | (5,922) | | | | | | (5,922) | |
| Disposal of treasury stock | | 0 | | 0 | 0 | | | | | | 0 | |
| Retirement of treasury stock | | (0) | (17,148) | 17,149 | — | | | | | | — | |
| Change in ownership interest of parent due to transactions with noncontrolling interests | | (184) | | | (184) | | | | | | (184) | |
| Net changes in items other than shareholders' equity | | | | | | 3,630 | (210) | 2,530 | 5,950 | 49 | 6,000 | |
| Total changes in items during the period | — | (185) | 16,363 | 11,226 | 27,404 | 3,630 | (210) | 2,530 | 5,950 | 49 | 33,405 | |
| Balance at March 31, 2018 | ¥47,869 | ¥54,639 | ¥278,374 | ¥ (6,422) | ¥374,461 | ¥31,211 | ¥(16,737) | ¥(3,273) | ¥11,200 | ¥2,454 | ¥388,115 | |
| | Thousands of U.S. dollars | | | | | | | | | | | |
| Balance at March 31, 2017 | \$451,594 | \$517,217 | \$2,471,792 | \$(166,500) | \$3,274,113 | \$260,189 | \$(155,915) | \$(54,755) | \$ 49,519 | \$22,679 | \$3,346,321 | |
| Changes during the fiscal year | | | | | | | | | | | | |
| Dividends of surplus | | | (102,104) | | (102,104) | | | | | | (102,104) | |
| Profit attributable to owners of the parent | | | 418,255 | | 418,255 | | | | | | 418,255 | |
| Purchase of treasury stock | | | | (55,868) | (55,868) | | | | | | (55,868) | |
| Disposal of treasury stock | | 0 | | 0 | 0 | | | | | | 0 | |
| Retirement of treasury stock | | (0) | (161,774) | 161,783 | — | | | | | | — | |
| Change in ownership interest of parent due to transactions with noncontrolling interests | | (1,736) | | | (1,736) | | | | | | (1,736) | |
| Net changes in items other than shareholders' equity | | | | | | 34,245 | (1,981) | 23,868 | 56,132 | 462 | 56,604 | |
| Total changes in items during the period | — | (1,745) | 154,368 | 105,906 | 258,528 | 34,245 | (1,981) | 23,868 | 56,132 | 462 | 315,142 | |
| Balance at March 31, 2018 | \$451,594 | \$515,462 | \$2,626,170 | \$ (60,585) | \$3,532,651 | \$294,443 | \$(157,896) | \$(30,877) | \$105,660 | \$23,151 | \$3,661,462 | |

See accompanying Notes to Consolidated Financial Statements.

Consolidated Statements of Cash Flows

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries
For the Years Ended March 31, 2018 and 2017

| | Millions of yen | | Thousands of U.S. dollars |
|--|-----------------|----------|---------------------------|
| | 2018 | 2017 | |
| Cash flows from operating activities | | | |
| Profit before income taxes | ¥ 60,098 | ¥ 34,833 | \$ 566,962 |
| Depreciation and amortization | 20,920 | 19,601 | 197,358 |
| Impairment loss | — | 20,187 | — |
| Increase in net defined benefit liability | 1,870 | 1,147 | 17,642 |
| Interest and dividend income | (2,521) | (2,579) | (23,783) |
| Interest expense | 511 | 342 | 4,821 |
| Equity in earnings of associates | (510) | (604) | (4,811) |
| Loss on disposal of noncurrent assets | 1,126 | 286 | 10,623 |
| Gain on sale of investment securities | (1,117) | — | (10,538) |
| Loss on valuation of investment securities | 5 | 74 | 47 |
| Increase in notes and accounts receivable - trade | (1,876) | (17,715) | (17,698) |
| Increase in inventories | (8,095) | (6,348) | (76,368) |
| Increase in notes and accounts payable - trade | 966 | 2,232 | 9,113 |
| Other, net | 6,053 | 1,950 | 57,104 |
| Subtotal | 77,430 | 53,408 | 730,472 |
| Interest and dividends received | 3,169 | 2,336 | 29,896 |
| Interest paid | (501) | (353) | (4,726) |
| Income taxes paid | (14,390) | (5,626) | (135,755) |
| Net cash provided by operating activities | 65,707 | 49,764 | 619,877 |
| Cash flows from investing activities | | | |
| Net increase in time deposits | (1,121) | (1,009) | (10,575) |
| Net decrease (increase) in short-term investment securities | 10,769 | (8,973) | 101,594 |
| Purchase of property, plant and equipment | (37,222) | (34,921) | (351,151) |
| Proceeds from sale of property, plant and equipment | 858 | 935 | 8,094 |
| Purchase of intangible assets | (1,675) | (1,636) | (15,802) |
| Purchase of investment securities | (837) | (8,739) | (7,896) |
| Proceeds from sale and redemption of investment securities | 1,927 | 1,002 | 18,179 |
| Other, net | 879 | (69) | 8,292 |
| Net cash used in investing activities | (26,422) | (53,410) | (249,264) |
| Cash flows from financing activities | | | |
| Net (decrease) increase in short-term loans payable | (574) | 10,866 | (5,415) |
| Proceeds from long-term loans payable | — | 8,000 | — |
| Repayment of long-term loans payable | — | (10) | — |
| Purchase of treasury stock | (5,922) | (10,001) | (55,868) |
| Cash dividends paid | (10,821) | (9,056) | (102,085) |
| Other, net | (725) | (341) | (6,840) |
| Net cash used in financing activities | (18,043) | (544) | (170,217) |
| Effect of exchange rate changes on cash and cash equivalents | 318 | (1,147) | 3,000 |
| Net increase (decrease) in cash and cash equivalents | 21,558 | (5,338) | 203,377 |
| Cash and cash equivalents at beginning of year | 65,817 | 71,155 | 620,915 |
| Increase in cash and cash equivalents resulting from newly consolidated subsidiary | 2 | — | 19 |
| Cash and cash equivalents at end of year (Note 7) | ¥ 87,378 | ¥ 65,817 | \$ 824,321 |

See accompanying Notes to Consolidated Financial Statements.

Notes to Consolidated Financial Statements

NGK SPARK PLUG CO., LTD. and Consolidated Subsidiaries

1. Basis of Consolidated Financial Statements

The accompanying consolidated financial statements of NGK SPARK PLUG CO., LTD. (the “Company”) and its consolidated subsidiaries (together with the Company, the “NGK Spark Plug Group”) have been prepared in accordance with the provisions set forth in the Financial Instrument and Exchange Law of Japan and its related accounting regulations and in conformity with accounting principles generally accepted in Japan (“Japanese GAAP”), which are different in certain respects as to application and disclosure requirements from International Financial Reporting Standards (“IFRS”).

The accompanying consolidated financial statements are a translation, with some expanded descriptions, from the consolidated financial statements of the Company prepared in accordance with Japanese GAAP and filed with the appropriate Local Finance Bureau of the Ministry of Finance as required by the Financial Instrument and Exchange Law of Japan.

The amounts indicated in millions of yen are rounded down by truncating the figures below one million. Totals may not add up exactly because of such truncation. 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 at March 31, 2018, which was ¥106 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.

2. Summary of Significant Accounting Policies

(a) Principles of consolidation

The accompanying consolidated financial statements include the accounts of the Company and its significant subsidiaries. Investments in significant unconsolidated subsidiaries and associates are accounted for by the equity method. Investments in unconsolidated subsidiaries and associates not accounted for by the equity method are stated at cost. All intercompany transactions and accounts have been eliminated. The difference between the cost of investments in subsidiaries and the underlying equity in their net assets, adjusted based on the fair value at the time of acquisition, is deferred principally as goodwill and amortized over the estimated useful life, generally 5-10 years, on a straight-line basis.

The number of consolidated subsidiaries and associates accounted for by the equity method for the years ended March 31, 2018 and 2017 was as follows:

| | 2018 | 2017 |
|---|------|------|
| Consolidated subsidiaries: | | |
| Domestic | 12 | 11 |
| Overseas | 30 | 30 |
| Associates accounted for by the equity method | 3 | 3 |

During the year ended March 31, 2018, Nittoku Denshi Co., Ltd. was included in the scope of consolidation in order to improve the accuracy of the consolidated financial disclosure.

During the year ended March 31, 2017, NTK Ceramic Co., Ltd. (new N-CERA) and Ceramic Sensor Nakatsugawa Co., Ltd., which were newly established, were included in the scope of consolidation. The Company merged former N-CERA as of January 1, 2017.

Investments in the remaining unconsolidated subsidiaries and associated companies are stated at cost. If the equity method

of accounting had been applied to the investments in these companies, the effect on the accompanying consolidated financial statements would not have been material.

The major subsidiaries that are not consolidated are Bujias NGK Del Ecuador Cia Ltda., Nittoku Smile Co., Ltd. and Sharing FACTORY Co., Ltd. for the year ended March 31, 2018 and Bujias NGK Del Ecuador Cia Ltda. and Nittoku Denshi Co., Ltd. and Nittoku Smile Co. for the year ended March 31, 2017, respectively.

There were no unconsolidated subsidiaries accounted for by the equity method for all periods presented.

The Company has three associates accounted for by the equity method, namely, Woo Jin Industry Co., Ltd., Tokai Taima Kogu Co., Ltd. and Japan Medical Dynamic Marketing, INC. for all periods presented.

During the year ended March 31, 2017, Japan Medical Dynamic Marketing, Inc. became associates accounted for by the equity method due to the acquisition of their stock.

The major unconsolidated subsidiaries that are not accounted for by the equity method are Bujias NGK Del Ecuador Cia Ltda., Nittoku Smile Co., Ltd. and Sharing FACTORY Co., Ltd. for the year ended March 31, 2018 and Bujias NGK Del Ecuador Cia Ltda. and Nittoku Denshi Co., Ltd. and Nittoku Smile Co. for the year ended March 31, 2017, respectively.

The associate that is not accounted for by the equity method is Hayakawa Seiki Co., Ltd. for all periods presented.

These companies are excluded from the scope of the equity method because their net income (loss), retained earnings, accumulated other comprehensive income and others are immaterial, and the exclusion of these companies from the scope of companies accounted for by the equity method does not hinder a reasonable understanding of the Group’s financial position and results of operations.

For the year ended March 31, 2018, the fiscal year-end date of NGK Spark Plug (Shanghai) Co., Ltd., Changshu NGK Spark Plug Co., Ltd., NGK Spark Plug (Shanghai) Trading Co., Ltd., Bujias NGK de Mexico S.A. de C.V., LLC NGK Spark Plugs (Eurasia), Woo Jin Industry Co., Ltd. and two other companies is December 31. However, when preparing the consolidated financial statements, the Company uses the financial statements of the seven consolidated subsidiaries and one associate that have been compiled by a temporary closing of their accounts as of March 31.

(Unification of accounting policies applied to foreign subsidiaries for consolidated financial statements)
The Company has adopted Practical Issues Task Force (“PITF”) No. 18, “Practical Solution on Unification of Accounting Policies Applied to Foreign Subsidiaries for Consolidated Financial Statements,” issued by the Accounting Standards Board of Japan (“ASBJ”). PITF No. 18 requires that accounting policies and procedures applied by a parent company and its subsidiaries to similar transactions and events under similar circumstances should, in principle, be unified for the preparation of the consolidated financial statements. PITF No. 18, however, as a tentative measure, allows a parent company to prepare consolidated financial statements using its foreign subsidiaries’ financial statements prepared in accordance with either IFRS or U.S. generally accepted accounting principles (“U.S. GAAP”). In this case, adjustments for the following four items are required in the consolidation process so that their impact on profit attributable to the owners of the parent is accounted for in accordance with Japanese GAAP, unless the impact is not material.

- (a) Goodwill not subject to amortization
- (b) Actuarial gains and losses of defined benefit retirement plans recognized outside profit and loss

- (c) Capitalized expenditures for research and development activities
- (d) Fair value measurement of investment properties and revaluation of property, plant and equipment and intangible assets

(Unification of accounting policies applied to associates accounted for using the equity method)

The Company also has adopted ASBJ PITF No. 24, “Practical Solution on Unification of Accounting Policies Applied to Associates Accounted for Using the Equity Method.” PITF No. 24 requires that accounting policies and procedures applied by an investment company and its associates to similar transactions and events under similar circumstances should, in principle, be unified for applying the equity method. PITF No. 24, however, as a tentative measure, allows an investment company to apply the equity method using its foreign associates’ financial statements prepared in accordance with either IFRS or U.S. GAAP. In this case, adjustments for the same four items as PITF No. 18 are required in the consolidation process so that their impact on profit attributable to the owners of the parent is accounted for in accordance with Japanese GAAP, unless the impact is not material.

(b) Cash and cash equivalents

The NGK Spark Plug Group considers highly liquid debt instruments purchased with an original maturity of three months or less, which are readily convertible to known amounts of cash, and therefore present an insignificant risk of changes in value to changes in interest rates, to be cash equivalents.

(c) Investments and marketable securities

The NGK Spark Plug Group classifies certain investments in debt and equity securities as “held-to-maturity,” “trading” or “available-for-sale.” The classification determines the respective accounting method to be applied to the investments as stipulated by the accounting standards for financial instruments. The NGK Spark Plug Group has no securities categorized as trading or held-to-maturity securities. Available-for-sale securities are stated at fair value if such value is available, and net unrealized gain or loss on these securities is reported as a component of accumulated other comprehensive income, net of applicable income taxes. Gains and losses on the disposal of available-for-sale securities are computed by the moving average method. Available-for-sale securities without available fair value are carried at cost determined by the moving average method. Adjustments in the carrying values of individual investment securities are charged to income through write-downs when a decline in value is deemed other than temporary.

(d) Accounting for derivatives

Derivative instruments are valued at fair value if hedge accounting is not appropriate or when there is no hedging designation, and the gains and losses on the derivatives are recognized in current earnings. According to the special treatment permitted by the accounting standard for financial instruments, if interest rate and currency swap contracts are used as hedges and meet certain hedging criteria, the interest rate and currency swap contracts are not remeasured at market price, and the amount to be received under the interest rate and currency swap contracts is added to or deducted from the interest on the liabilities for which the swap contracts are executed, and the liabilities denominated in foreign currencies for which the interest rate and currency swap contracts

are executed are translated at the contracted rate. Measurement of hedge effectiveness is not considered necessary for interest rate and currency swap contracts that meet the requirements for the special treatment.

(e) Inventories

Inventories held for sale in the ordinary course of business are valued at the lower of cost, determined principally by the moving average method, or net realizable value. If net realizable value has fallen below cost as of the end of the period, the cost basis is reduced to net realizable value and regarded as decreased profitability of inventories.

(f) Allowance for doubtful accounts

Allowance for doubtful accounts has been provided for at the aggregate amount of estimated credit losses based on an individual review of certain doubtful or troubled receivables and a general reserve for other receivables based on the historical loss experience of a certain past period.

(g) Noncurrent assets and depreciation/amortization

Property, plant and equipment (except for lease assets), including significant renewals and additions, are stated at cost. Depreciation is calculated by the straight-line method based on the estimated useful life of the asset, principally ranging from 8 to 50 years for buildings and from 4 to 10 years for machinery, equipment and vehicles.

Intangible assets (except for lease assets), including software for internal use, are mainly amortized using the straight-line method over the estimated useful life of the asset. The estimated useful life of software for internal use is mainly 5 years.

Expenditures on maintenance and repairs are charged to income as incurred. Upon disposal, the cost and accumulated depreciation are removed from the related accounts and any gain or loss is recorded as gain or loss.

(h) Leases

The Company and its domestic consolidated subsidiaries capitalize the assets used under finance leases as lessee, except for certain immaterial or short-term finance leases which are accounted for as operating leases in accordance with the current accounting standard. Depreciation is calculated using the straight-line method over the lease term and assuming no residual value.

(i) Impairment of fixed assets

The Company and its domestic consolidated subsidiaries have adopted the “Accounting Standard for Impairment of Fixed Assets” and the related practical guidance. The standard requires that fixed assets be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. An impairment loss is recognized in the income statement by reducing the carrying amount of the impaired asset or a group of assets to the recoverable amount, measured by the higher of the asset’s net selling price or value in use. Fixed assets include land, plants, buildings and other forms of property, including intangible assets, and are to be grouped at the lowest level for which there are identifiable cash flows from other groups of assets. For the purpose of recognition and measurement of an impairment loss, fixed assets of the NGK Spark Plug Group, other than idle or unused property, are grouped into cash generating units based on managerial accounting classifications.

(j) Employee retirement benefits

The difference between retirement benefit obligations and plan assets has been recognized as net defined benefit liability. To calculate the retirement benefit obligations, the benefit formula basis is used to allocate estimated retirement benefits to periods of service. Past service cost that is yet to be recognized is amortized on a straight-line basis over ten years, a period not exceeding the average remaining service period of the employees. Actuarial gains and losses that are yet to be recognized are amortized on a straight-line basis over ten years, a period not exceeding the average remaining service period of employees, from the year following the year in which they arise. Net defined benefit liability and retirement benefit costs of certain consolidated subsidiaries are calculated using the simplified method as permitted by the accounting standard for retirement benefits.

(k) Translation of foreign currency accounts

Receivables, payables and securities, other than stocks of subsidiaries and certain other securities, are translated into Japanese yen at exchange rates prevailing at the fiscal year-end. Transactions in foreign currencies are recorded based on the exchange rates prevailing on the transaction dates. Resulting translation gains and losses are included in current earnings.

For financial statement items of the overseas consolidated subsidiaries, all asset and liability accounts are translated into Japanese yen by applying the exchange rate in effect at the respective fiscal year-end. All income and expense accounts are translated at the average rate of exchange prevailing during the year. Translation differences, after allocating portions attributable to noncontrolling interests, are reported in foreign currency translation adjustments as a component of accumulated other comprehensive income in the accompanying consolidated balance sheets.

(l) Research and development expenses

Expenses related to research and development are charged to income as incurred. Research and development expenses arise from a wide range of the NGK Spark Plug Group's activities, including basic and applied research for material development, planning and designing of new products and processes and activities aimed at improving existing products and processes. For the years ended March 31, 2018 and 2017, research and development expenses aggregated ¥25,283 million (\$238,519 thousand) and ¥23,416 million, respectively. These amounts included research and development activities for basic and applied research and the development of new products and processes in the amount of ¥4,448 million (\$41,962 thousand) and ¥4,089 million at March 31, 2018 and 2017, respectively, and were recorded as general and administrative expenses. The remaining expenses were recorded for the respective years in the accompanying consolidated statements of income as manufacturing costs.

(m) Income taxes

Income taxes are accounted for by the asset-liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss carryforwards. Deferred tax assets and liabilities are measured using the enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change

in tax rates is recognized in the period that includes the enactment date.

(n) Enterprise taxes

The NGK Spark Plug Group records enterprise taxes calculated based on the "added value" and "capital" amounts when levied as size-based corporate taxes for local government enterprise taxes, which are included in selling, general and administrative expenses.

(o) Appropriation of retained earnings

Cash dividends are recorded in the fiscal year when a proposed appropriation of retained earnings is approved by the Board of Directors of the Company.

(p) Per share data

Basic earnings per share is computed by dividing income available to common shareholders by the weighted average number of shares of common stock outstanding during the year. Diluted earnings per share is not disclosed as the NGK Spark Plug Group had no dilutive common shares. Cash dividends per share shown for each fiscal year in the accompanying consolidated statements of income represent dividends declared by the Company as applicable to the respective year.

(q) Consumption Taxes

All figures are net of consumption taxes.

(r) Provision for stock benefits

The provision for stock benefits is provided at the estimated amount of stock benefits to directors and corporate officers at the fiscal year-end in accordance with the internal rules for stock delivery.

(s) New accounting standards issued but not yet adopted

(Standards and guidance not yet adopted)
The following standard and guidance were issued but not yet adopted.

- "Accounting Standard for Revenue Recognition" (ASBJ Statement No. 29, March 30, 2018)
- "Implementation Guidance on Accounting Standard for Revenue Recognition" (ASBJ Guidance No. 30, March 30, 2018)

(1) Overview

The above standard and guidance provide comprehensive principles for revenue recognition. Under the standard and guidance, revenue is recognized by applying following 5 steps:
Step 1: Identify contract(s) with customers.
Step 2: Identify the performance obligations in the contract.
Step 3: Determine the transaction price.
Step 4: Allocate the transaction price to the performance obligation in the contract.
Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation.

(2) Effective date

The effective date of these new standards is under consideration.

(3) Effects of application

The Company and its consolidated domestic subsidiaries are in the process of determining the effects of these new standards on the consolidated financial statements.

(t) Changing in presentation

(Consolidated Statements of Income)
"Contribution," which was presented as a separate item under

"Other nonoperating expenses" in the previous fiscal year, is included in "Other nonoperating expenses" from the current fiscal year because the amount was less than 10% of total nonoperating expenses. In order to reflect the change in presentation, the consolidated statement of income for the previous fiscal year has been reclassified to reflect a consistent presentation format. As a result of this change, ¥311 million (\$2,934 thousand) of "Contribution" for the previous fiscal year was reclassified as "Other nonoperating expenses."

(u) Additional information

(Performance-linked stock compensation plan)
In order to increase the Directors' awareness of their contribution to the enhancement of the Company's medium- to long-term performance and the improvement of corporate value, the Company introduced a performance-linked stock compensation plan (the "Plan") for Directors and Corporate Officers of the Company (excluding Outside Directors and nonresidents of Japan, collectively "Directors, etc."), which is a highly performance-linked, transparent and objective compensation plan.

The Company applies the "Practical Solution on Transactions of Delivering the Company's Own Stock to Employees, etc. through Trusts" (PITF No. 30, March 26, 2015) for the accounting treatment of the Plan.

(1) Transaction summary

The Plan uses an officer compensation BIP (Board Incentive Plan) trust by which Directors are granted shares of the Company and paid the cash equivalent to the market value of the shares of the Company after conversion into cash according to the degree of achievement of performance targets outlined in the medium-term management plan and other considerations.

(2) The Company's own stock in the trust

The Company's own stock in the possession of the trust is recorded as treasury stock under net assets at book value (excluding ancillary expenses). The book value and number of shares of treasury stock were ¥919 million (\$8,670 thousand) and 433,200 shares, respectively as of the fiscal year ended March 31, 2018.

(Revised Implementation Guidance on Recoverability of Deferred Tax Assets)

The Company and its domestic subsidiaries adopted "Revised Implementation Guidance on Recoverability of Deferred Tax Assets" (ASBJ Guidance No. 26, March 28, 2016 ("Guidance No. 26")) from the fiscal year ended March 31, 2017.

3. Notes to Consolidated Balance Sheets

(a) Inventories

At March 31, 2018 and 2017, inventories consisted of the following:

| | Millions of yen | | Thousands of U.S. dollars |
|-----------------|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Finished goods | ¥50,915 | ¥48,911 | \$480,330 |
| Work-in-process | 29,906 | 25,581 | 282,132 |
| Raw materials | 14,132 | 12,364 | 133,321 |

(b) Accumulated depreciation of property, plant and equipment

At March 31, 2018 and 2017, accumulated depreciation of property, plant and equipment amounted to ¥299,878 million (\$2,829,038 thousand) and ¥301,800 million, respectively.

(c) Investment securities

Among investment securities, shares of unconsolidated subsidiaries and associates at March 31, 2018 and 2017, amounted to ¥12,349 million (\$116,500 thousand) and ¥12,256 million, respectively.

(d) Notes receivable matured at the end of fiscal year

Notes receivable that were to mature at the consolidated balance sheet date were accounted for at the date of actual settlement. Since the last day of the current fiscal year was a bank holiday and the following notes matured on March 31, 2018, they were included in the consolidated balance sheets as of March 31, 2018:

| | Millions of yen | | Thousands of U.S. dollars |
|--------------------------|-----------------|------|---------------------------|
| | 2018 | 2017 | 2018 |
| Notes receivable – trade | ¥66 | ¥— | \$623 |

(e) Contingent Liabilities

(1) Guarantee on loans

At March 31, 2018 and 2017, contingent liabilities in respect to guarantees of indebtedness, principally of employees, amounted to ¥11 million (\$104 thousand) and ¥14 million, respectively.

(2) The NGK Spark Plug Group is subject to investigations by overseas authorities regarding possible violations of competition laws in relation to certain past transactions in the automotive components segment. In connection, compensation for damage claims have been discussed with some customers and civil lawsuits have been filed. Additional losses may arise if new facts related to possible violations become known. However, the effect of these contingent liabilities on the consolidated financial statements is not reasonably estimable at this stage.

4. Notes to Consolidated Statements of Income

(a) Loss on valuation of inventories

For the years ended March 31, 2018 and 2017, a write-down of ¥1,193 million (\$11,255 thousand) and ¥274 million, respectively, was recognized as costs of goods sold.

(b) Selling, general and administrative expenses

Major components of selling, general and administrative expenses for the years ended March 31, 2018 and 2017 were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Depreciation | ¥ 2,401 | ¥ 3,044 | \$ 22,651 |
| Provision of allowance for doubtful accounts | 223 | 183 | 2,104 |
| Retirement benefit costs | 1,269 | 1,356 | 11,972 |
| Directors compensation and employee salaries and allowances | 27,246 | 25,782 | 257,038 |
| Packing and transportation expenses | 8,653 | 6,188 | 81,632 |
| Advertising expenses | 5,974 | 5,602 | 56,358 |
| Research and development expenses* | 4,448 | 4,089 | 41,962 |

* The aggregate amounts of research and development expenses included in selling, general and administrative expenses for the years ended March 31, 2018 and 2017, were ¥4,448 million (\$41,962 thousand) and ¥4,089 million, respectively.

(c) Gain on sale of noncurrent assets

Major components of gain on sale of noncurrent assets for the years ended March 31, 2018 and 2017 were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|-----------------------------------|-----------------|------|---------------------------|
| | 2018 | 2017 | 2018 |
| Buildings and structures | ¥ 0 | ¥287 | \$ 0 |
| Machinery, equipment and vehicles | 78 | 59 | 736 |
| Land | 113 | 136 | 1,066 |
| Software | 0 | 0 | 0 |
| Other | 6 | 2 | 57 |

(d) Loss on sale or disposal of noncurrent assets

Major components of loss on sale or disposal of noncurrent assets for the years ended March 31, 2018 and 2017 were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|-----------------------------------|-----------------|------|---------------------------|
| | 2018 | 2017 | 2018 |
| Buildings and structures | ¥371 | ¥337 | \$3,500 |
| Machinery, equipment and vehicles | 917 | 287 | 8,651 |
| Land | — | 0 | — |
| Software | 5 | 1 | 47 |
| Other | 31 | 145 | 292 |

(e) Impairment loss

Although no impairment loss was recorded for the year ended March 31, 2018, the NGK Spark Plug Group recognized an impairment loss on fixed assets in the amount of ¥20,187 million as extraordinary loss for the year ended March 31, 2017.

For the year ended March 31, 2017, impairment loss consisted of ¥7,513 million on goodwill, ¥8,765 million on other intangible assets and ¥3,908 million on machinery and equipment and other assets. The NGK Spark Plug Group revised the future business plan of a consolidated subsidiary, Wells Vehicle Electronics Holdings Corp. (hereinafter “Wells”), and its subsidiaries, as its business results were less than what was estimated upon acquiring Wells. As a result of careful consideration of future recoverability based on the revised business plan, the NGK Spark Plug Group recognize an impairment loss of goodwill, intangible assets and other properties related to Wells. The grouping of operating assets is based on managerial accounting categories. Idle assets are recorded separately in each fixed assets class. Recoverable amounts were estimated using value in use and amounted to nil.

(f) Environmental expenses

For the year ended March 31, 2018, the NGK Spark Plug Group recognized environmental expenses for the soil improvement costs of an overseas subsidiary in the amount of ¥559 million (\$5,274 thousand) as extraordinary loss.

5. Notes to Consolidated Statements of Comprehensive Income

Amounts reclassified as profit in the current period that were recognized in other comprehensive income in the current or previous periods and the tax effects for each component of other comprehensive income were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Unrealized gains on available-for-sale securities | | | |
| Increase during the year | ¥ 6,463 | ¥ 6,879 | \$ 60,972 |
| Reclassification adjustments | (1,117) | 64 | (10,538) |
| Subtotal, before tax | 5,345 | 6,943 | 50,425 |
| Tax effect | (1,690) | (2,105) | (15,943) |
| Subtotal, net of tax | 3,655 | 4,837 | 34,481 |

| | | | |
|---|---------|---------|-----------|
| Foreign currency translation adjustments | | | |
| Increase (decrease) during the year | 16 | (1,007) | 151 |
| Remeasurements of defined benefit plans | | | |
| Increase during the year | 1,919 | 2,023 | 18,104 |
| Reclassification adjustments | 1,673 | 2,113 | 15,783 |
| Subtotal, before tax | 3,593 | 4,136 | 33,896 |
| Tax effect | (1,033) | (1,208) | (9,745) |
| Subtotal, net of tax | 2,560 | 2,928 | 24,151 |
| Share of other comprehensive income of associates accounted for using equity method | | | |
| (Decrease) increase during the year | (161) | 113 | (1,519) |
| Total other comprehensive income | ¥ 6,070 | ¥ 6,872 | \$ 57,264 |

6. Notes to Consolidated Statements of Change in Net Assets

For the year ended March 31, 2018

(a) Class and total number of issued and outstanding shares and treasury stock

| | Number of Shares | | | |
|-------------------------------|----------------------|-----------|------------|----------------------|
| | As of March 31, 2017 | Increase | Decrease | As of March 31, 2018 |
| Issued and outstanding shares | | | | |
| Common stock | 223,544,820 | — | 11,000,000 | 212,544,820 |
| Total | 223,544,820 | — | 11,000,000 | 212,544,820 |
| Treasury stock | | | | |
| Common stock | 11,320,756 | 2,335,168 | 11,000,036 | 2,655,888 |
| Total | 11,320,756 | 2,335,168 | 11,000,036 | 2,655,888 |

Notes: 1) The decrease of 11,000,000 shares of issued and outstanding shares of common stock was due to the retirement of treasury stock.
2) The breakdown of the increase of 2,335,168 shares of treasury stock was 1,168 shares from the purchase of shares in quantities of less than one share unit, 1,900,800 shares from the repurchase of shares pursuant to the resolution at the meeting of the Board of Directors held on February 26, 2018 and 433,200 shares from the purchase of shares by the officer compensation BIP trust.
3) The breakdown of the decrease of 11,000,036 shares of treasury stock was 11,000,000 shares from the retirement of treasury stock and 36 shares from the sale of shares in quantities of less than one share unit.
4) The number of shares of treasury stock as of March 31, 2018 included 433,200 shares held by the officer compensation BIP trust.

(b) Dividends

i) Cash dividends paid

| Resolution | Type of Shares | Total dividends | Dividend per share | Date of record | Payment date |
|------------------------------------|----------------|------------------------------------|--------------------|--------------------|-------------------|
| Board of Directors on May 9, 2017 | Common stock | ¥4,456 million (\$42,038 thousand) | ¥21 (\$198) | March 31, 2017 | June 8, 2017 |
| Board of Directors on Oct 30, 2017 | Common stock | ¥6,366 million (\$60,057 thousand) | ¥30 (\$283) | September 30, 2017 | November 30, 2017 |

(Note) Total cash dividends paid in accordance with the resolution of the meeting of the Board of Directors held on October 30, 2017 included ¥12 million (\$113 thousand) of cash dividends for the stock held by the officer compensation BIP trust.

ii) Dividends for which the date of record falls within the fiscal year under audit but the payment date occurs in the following fiscal year

| Resolution | Type of Shares | Source of dividends | Total dividends | Dividend per share | Date of record | Payment date |
|--------------------------------------|----------------|---------------------|------------------------------------|--------------------|----------------|--------------|
| Board of Directors on April 27, 2018 | Common stock | Retained earnings | ¥6,309 million (\$59,519 thousand) | ¥30 (\$283) | March 31, 2018 | June 5, 2018 |

(Note) Total cash dividends paid included ¥12 million (\$113 thousand) of cash dividends for the stock held by the officer compensation BIP trust.

For the year ended March 31, 2017

(a) Class and total number of issued and outstanding shares and treasury stock

| | Number of Shares | | | |
|-------------------------------|----------------------|-----------|----------|----------------------|
| | As of March 31, 2016 | Increase | Decrease | As of March 31, 2017 |
| Issued and outstanding shares | | | | |
| Common stock | 223,544,820 | — | — | 223,544,820 |
| Total | 223,544,820 | — | — | 223,544,820 |
| Treasury stock | | | | |
| Common stock | 5,923,363 | 5,397,451 | 58 | 11,320,756 |
| Total | 5,923,363 | 5,397,451 | 58 | 11,320,756 |

Notes: 1) The increase of 851 shares in common stock of treasury stock was due to the purchase of shares in quantities of less than one share unit.
2) The increase of 5,396,600 shares in common stock of treasury stock was due to the repurchase of shares pursuant to the resolution at the meeting of the Board of Directors held on July 29, 2016.
3) The decrease of 58 shares in common stock of treasury stock was due to the sale of shares in quantities of less than one share unit.

(b) Dividends

i) Cash dividends paid

| Resolution | Type of Shares | Total dividends | Dividend per share | Date of record | Payment date |
|------------------------------------|----------------|-----------------|--------------------|--------------------|-------------------|
| Board of Directors on May 9, 2016 | Common stock | ¥4,570 million | ¥21 | March 31, 2016 | June 8, 2016 |
| Board of Directors on Oct 31, 2016 | Common stock | ¥4,485 million | ¥21 | September 30, 2016 | November 30, 2016 |

ii) Dividends for which the date of record falls within the fiscal year under audit but the payment date occurs in the following fiscal year

| Resolution | Type of Shares | Source of dividends | Total dividends | Dividend per share | Date of record | Payment date |
|-----------------------------------|----------------|---------------------|-----------------|--------------------|----------------|--------------|
| Board of Directors on May 9, 2017 | Common stock | Retained earnings | ¥4,456 million | ¥21 | March 31, 2017 | June 8, 2017 |

7. Notes to Consolidated Statements of Cash Flows

Cash and cash equivalents

Reconciliation of cash and cash equivalents on the consolidated statements of cash flows to the amounts disclosed on the consolidated balance sheets at March 31, 2018 and 2017, were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|--|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Cash and deposits | ¥ 56,235 | ¥ 45,733 | \$ 530,519 |
| Short-term investment securities | 59,905 | 57,210 | 565,142 |
| Subtotal | 116,141 | 102,943 | 1,095,670 |
| Time deposits with deposit term of over 3 months | (9,556) | (9,115) | (90,151) |
| Short-term investment securities other than cash equivalents | (19,205) | (28,010) | (181,179) |
| Cash and cash equivalents | ¥ 87,378 | ¥ 65,817 | \$ 824,321 |

8. Lease Commitments

(a) Finance lease transactions

Financing lease transactions without transfer of ownership of leased assets

- i) Components of lease assets are as follows:
- 1) Property, plant and equipment: Mainly equipment (tools, furniture and fixtures) for development in the automotive components segment.
 - 2) Intangible assets: Mainly intra-communication systems (software).
- ii) Depreciation of lease assets:
- Depreciation is calculated using the straight-line method over the lease term and assuming no residual value.

(b) Operating lease transactions

At March 31, 2018 and 2017, the NGK Spark Plug Group had annual commitments under operating leases as lessee. The aggregate future minimum payments for noncancelable operating leases were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|---------------------|-----------------|--------|---------------------------|
| | 2018 | 2017 | 2018 |
| Due within one year | ¥ 804 | ¥ 644 | \$ 7,585 |
| Due after one year | 2,909 | 1,840 | 27,443 |
| | ¥3,713 | ¥2,485 | \$35,028 |

9. Financial Instruments

(a) Qualitative information on financial instruments

The NGK Spark Plug Group does not invest surplus funds in securities other than short-term bank deposits and debt securities with high liquidity from issuers with high credit ratings in accordance with its accounting rules and policies. The NGK Spark Plug Group uses indirect financing from financial institutions such as correspondent banks and direct financing from financial markets principally by the issuance of corporate bonds to satisfy short-term and long-term funding requirements.

The NGK Spark Plug Group is exposed to credit risk primarily with respect to trade receivables. In order to reduce the credit risk of these receivables, the NGK Spark Plug Group sets payment terms according to the credit capability of its customers. In some cases, the NGK Spark Plug Group receives security deposits in advance.

The NGK Spark Plug Group holds investments in securities such as negotiable certificates of deposits, debt securities and equity securities whose fair values are monitored on a quarterly basis.

The NGK Spark Plug Group is a party to derivative instruments such as foreign currency forward exchange contracts, currency option contracts and interest rate and currency swap agreements in the normal course of business principally for hedging purposes in order to reduce its exposure to fluctuations in exchange rates and interest rates. The NGK Spark Plug Group does not hold or issue derivative financial instruments for trading purposes. Under the NGK Spark Plug Group's financial management policies, contract balances of currency derivatives are limited to certain anticipated export sales and import purchases.

(b) Fair value of financial instruments

The fair value and carrying value of financial instruments at March 31, 2018 and 2017, other than unlisted equity securities for which the fair value was extremely difficult to determine, were as follows:

| | Carrying value | Fair value | Difference |
|---------------------------------------|-------------------|---------------|------------|
| Millions of yen | | | |
| At March 31, 2018: | | | |
| Financial assets: | | | |
| Cash and deposits | ¥ 56,235 | ¥ 56,235 | ¥ — |
| Notes and accounts receivable - trade | 93,615 | 93,615 | — |
| Short-term investment securities: | | | |
| Available-for-sale securities | 59,905 | 59,905 | — |
| Investment securities: | | | |
| Shares of associates | 6,322 | 7,903 | 1,581 |
| Available-for-sale securities | 56,961 | 56,961 | — |
| Total | ¥273,040 | ¥274,621 | ¥1,581 |
| Financial liabilities: | | | |
| Accounts payable - trade | ¥ 32,407 | ¥ 32,407 | ¥ — |
| Short-term loans payable | 10,113 | 10,113 | — |
| Long-term loans payable *1) | 32,848 | 32,902 | 54 |
| Bonds payable *2) | 55,000 | 55,143 | 143 |
| Total | ¥130,368 | ¥130,567 | ¥ 198 |
| Derivative instruments *3) | ¥ 247 | ¥ 247 | ¥ — |

At March 31, 2017:

| | | | |
|---------------------------------------|----------|----------|--------|
| Financial assets: | | | |
| Cash and deposits | ¥ 45,733 | ¥ 45,733 | ¥ — |
| Notes and accounts receivable - trade | 91,594 | 91,594 | — |
| Short-term investment securities: | | | |
| Available-for-sale securities | 57,210 | 57,210 | — |
| Investment securities: | | | |
| Shares of associates | 6,333 | 6,179 | (154) |
| Available-for-sale securities | 54,332 | 54,332 | — |
| Total | ¥255,205 | ¥255,050 | ¥(154) |
| Financial liabilities: | | | |
| Accounts payable - trade | ¥ 30,045 | ¥ 30,045 | ¥ — |
| Short-term loans payable | 11,259 | 11,259 | — |
| Long-term loans payable | 32,848 | 32,982 | 134 |
| Bonds payable | 55,000 | 55,287 | 287 |
| Total | ¥129,153 | ¥129,574 | ¥ 421 |
| Derivative instruments *3) | ¥ 253 | ¥ 253 | ¥ — |

| | Carrying value | Fair value | Difference |
|---------------------------------------|-------------------|---------------|------------|
| Thousands of U.S. dollars | | | |
| At March 31, 2018: | | | |
| Financial assets: | | | |
| Cash and deposits | \$ 530,519 | \$ 530,519 | \$ — |
| Notes and accounts receivable - trade | 883,160 | 883,160 | — |
| Short-term investment securities: | | | |
| Available-for-sale securities | 565,142 | 565,142 | — |
| Investment securities: | | | |
| Shares of associates | 59,642 | 74,557 | 14,915 |
| Available-for-sale securities | 537,368 | 537,368 | — |
| Total | \$2,575,849 | \$2,590,764 | \$14,915 |
| Financial liabilities: | | | |
| Accounts payable - trade | \$ 305,726 | \$ 305,726 | \$ — |
| Short-term loans payable | 95,406 | 95,406 | — |
| Long-term loans payable *1) | 309,887 | 310,396 | 509 |
| Bonds payable *2) | 518,868 | 520,217 | 1,349 |
| Total | \$1,229,887 | \$1,231,764 | \$ 1,868 |
| Derivative instruments *3) | \$ 2,330 | \$ 2,330 | \$ — |

*1) The carrying value of long-term loans payable includes the current portion of long-term loans payable.

*2) The carrying value of bonds payable includes the current portion of bonds payable.

*3) The value of derivative instruments is shown as a net position.

Notes:

(1) The methods and assumptions used to estimate the fair value of financial instruments are summarized below:

The fair value of cash and deposits, notes and accounts receivable - trade, accounts payable - trade and short-term loans payable is approximately equal to the carrying value due to their short-term maturities. The fair value of investment equity securities is based on quoted market prices. The fair value of bonds and other securities included in investment securities, bonds payable and derivative instruments is based on the price provided by correspondent financial institutions. The fair value of long-term loans payable is computed based on the total amount of principal and interest discounted at an interest rate applicable to new loans under the same conditions.

(2) The following securities are not included in the table above because the fair value was extremely difficult to determine.

| | Carrying value | | Thousands of U.S. dollars |
|---|-----------------|--------|------------------------------|
| | Millions of yen | 2017 | 2018 |
| Investments (equity securities) in unconsolidated subsidiaries and associates | ¥6,027 | ¥5,922 | \$56,858 |
| Unlisted equity securities | 2,369 | 1,662 | 22,349 |

(3) Expected maturities of financial assets at March 31, 2018 and 2017, were as follows:

| | Due in one year or less | Due in one year through five years | Due later than five years |
|---------------------------------------|----------------------------|--|------------------------------|
| Millions of yen | | | |
| At March 31, 2018: | | | |
| Cash and deposits | ¥ 56,235 | ¥— | ¥— |
| Notes and accounts receivable - trade | 93,615 | — | — |
| Investments | | | |
| Bonds | 9,000 | — | — |

10. Investment securities

(a) At March 31, 2018 and 2017, the cost and fair value of available-for-sale securities were summarized as follows:

| | Millions of yen | | |
|-------------------------|----------------------------|---------|------------------------------|
| | 2018 | | |
| | Fair and carrying value | Cost | Unrealized gains (losses) |
| With unrealized gains: | | | |
| Equity securities | ¥ 56,960 | ¥11,870 | ¥45,090 |
| Bonds | 4,000 | 3,999 | 0 |
| Other | 7,200 | 7,200 | 0 |
| Subtotal | 68,162 | 23,069 | 45,092 |
| With unrealized losses: | | | |
| Equity securities | 0 | 0 | (0) |
| Bonds | 5,004 | 5,036 | (31) |
| Negotiable deposits | 40,700 | 40,700 | — |
| Other | 3,000 | 3,000 | — |
| Subtotal | 48,705 | 48,736 | (31) |
| Total | ¥116,867 | ¥71,806 | ¥45,060 |

| | Millions of yen | | |
|-------------------------|----------------------------|---------|------------------------------|
| | 2017 | | |
| | Fair and carrying value | Cost | Unrealized gains (losses) |
| With unrealized gains: | | | |
| Equity securities | ¥ 52,154 | ¥12,484 | ¥39,670 |
| Bonds | 5,004 | 4,999 | 4 |
| Other | 5,880 | 5,312 | 567 |
| Subtotal | 63,039 | 22,796 | 40,242 |
| With unrealized losses: | | | |
| Equity securities | 153 | 170 | (17) |
| Bonds | 10,050 | 10,112 | (62) |
| Negotiable deposits | 29,200 | 29,200 | — |
| Other | 9,099 | 9,100 | (0) |
| Subtotal | 48,503 | 48,583 | (79) |
| Total | ¥111,543 | ¥71,380 | ¥40,162 |

| | Thousands of U.S. dollars | | |
|-------------------------|----------------------------|-----------|------------------------------|
| | 2018 | | |
| | Fair and carrying value | Cost | Unrealized gains (losses) |
| With unrealized gains: | | | |
| Equity securities | \$ 537,358 | \$111,981 | \$425,377 |
| Bonds | 37,736 | 37,726 | 0 |
| Other | 67,925 | 67,925 | 0 |
| Subtotal | 643,038 | 217,632 | 425,396 |
| With unrealized losses: | | | |
| Equity securities | 0 | 0 | (0) |
| Bonds | 47,208 | 47,509 | (292) |
| Negotiable deposits | 383,962 | 383,962 | — |
| Other | 28,302 | 28,302 | — |
| Subtotal | 459,481 | 459,774 | (292) |
| Total | \$1,102,519 | \$677,415 | \$425,094 |

Note: For equity investments in nonpublic companies with a carrying amount as of March 31, 2018 and 2017, amounting to ¥2,369 million (\$22,349 thousand) and ¥1,662 million, respectively, fair values were not included in equity securities above as no quoted market prices were available and it was deemed extremely difficult to determine the fair values due to the impossibility of estimating future cash flows.

| | | | |
|---------------------------------------|-------------|--------|-----|
| Negotiable deposits | 40,700 | — | — |
| Other | 10,200 | — | — |
| | ¥209,751 | ¥— | ¥— |
| At March 31, 2017: | | | |
| Cash and deposits | ¥ 45,733 | ¥ — | ¥— |
| Notes and accounts receivable - trade | 91,594 | — | — |
| Investments | | | |
| Bonds | 13,000 | 2,000 | — |
| Negotiable deposits | 29,200 | — | — |
| Other | 13,600 | — | — |
| | ¥193,127 | ¥2,000 | ¥— |
| Thousands of U.S. dollars | | | |
| At March 31, 2018: | | | |
| Cash and deposits | \$ 530,519 | \$— | \$— |
| Notes and accounts receivable - trade | 883,160 | — | — |
| Investments | | | |
| Bonds | 84,906 | — | — |
| Negotiable deposits | 383,962 | — | — |
| Other | 96,226 | — | — |
| | \$1,978,783 | \$— | \$— |

(4) Contractual maturities of bank loans and bonds payable at March 31, 2018 and 2017, were as follows:

| | Millions of yen | | |
|-----------------------|-----------------------------|------------------|----------------------------|
| | 2018 | | |
| Year ending March 31, | Short-term loans payable | Bonds payable | Long-term loans payable |
| 2019 | ¥10,113 | ¥25,000 | ¥9,962 |
| 2020 | — | — | 9,924 |
| 2021 | — | 30,000 | 4,962 |
| 2022 | — | — | 8,000 |
| 2023 | — | — | — |
| 2024 and thereafter | — | — | — |

| | Millions of yen | | |
|-----------------------|-----------------------------|------------------|----------------------------|
| | 2017 | | |
| Year ending March 31, | Short-term loans payable | Bonds payable | Long-term loans payable |
| 2018 | ¥11,259 | ¥ — | ¥ — |
| 2019 | — | 25,000 | 9,962 |
| 2020 | — | — | 9,924 |
| 2021 | — | 30,000 | 4,962 |
| 2022 | — | — | 8,000 |
| 2023 and thereafter | — | — | — |

| | Thousands of U.S. dollars | | |
|-----------------------|-----------------------------|------------------|----------------------------|
| | 2018 | | |
| Year ending March 31, | Short-term loans payable | Bonds payable | Long-term loans payable |
| 2019 | \$95,406 | \$235,849 | \$93,981 |
| 2020 | — | — | 93,623 |
| 2021 | — | 283,019 | 46,811 |
| 2022 | — | — | 75,472 |
| 2023 | — | — | — |
| 2024 and thereafter | — | — | — |

Notes to Consolidated Financial Statements

(b) Available-for-sale securities sold during the years ended March 31, 2018 and 2017 were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|---------------------------------------|-----------------|------|---------------------------|
| | 2018 | 2017 | 2018 |
| Sale of available-for-sale securities | ¥1,918 | ¥— | \$18,094 |
| Gain on sales | 1,117 | — | 10,538 |
| Loss on sales | — | — | — |

(c) Loss on the write-down of available-for-sale securities was not material for the years ended March 31, 2018 and 2017.

11. Derivative Instruments

At March 31, 2018 and 2017, derivative instruments, except for derivative instruments accounted for by hedge accounting, were stated at fair value and recognized for valuation gains and losses in current earnings as follows:

| | Notional principal or contract amounts | Fair value | Valuation gains (losses) |
|-----------------------------|--|------------|-----------------------------|
| | Millions of yen | | |
| At March 31, 2018: | | | |
| Foreign exchange contracts: | | | |
| Forward contracts to sell | ¥12,347 | ¥242 | ¥242 |
| Currency call options | 2,242 | (34) | (34) |
| Currency put options | 1,831 | 39 | 39 |
| | | | ¥247 |

| | | | |
|-----------------------------|---------|------|------|
| At March 31, 2017: | | | |
| Foreign exchange contracts: | | | |
| Forward contracts to sell | ¥18,065 | ¥205 | ¥205 |
| Currency call options | 2,364 | (8) | (8) |
| Currency put options | 1,300 | 56 | 56 |
| | | | ¥253 |

| | Thousands of U.S. dollars | | |
|-----------------------------|---------------------------|---------|---------|
| | 2018 | 2017 | 2018 |
| At March 31, 2018: | | | |
| Foreign exchange contracts: | | | |
| Forward contracts to sell | \$116,481 | \$2,283 | \$2,283 |
| Currency call options | 21,151 | (321) | (321) |
| Currency put options | 17,274 | 368 | 368 |
| | | | \$2,330 |

At March 31, 2018 and 2017, derivative instruments to which hedge accounting was applied were as follows:

| | Hedged items | Notional principal or contract amounts | Contract amounts due after one year | Fair value |
|---|----------------------|--|-------------------------------------|------------|
| | Millions of yen | | | |
| At March 31, 2018: | | | | |
| Interest rate and currency swaps: | | | | |
| (floating rate receipt, fixed rate payment) | | | | |
| (U.S.\$ receipt, Japanese yen payment) | Long-term bank loans | ¥32,848 | ¥22,886 | ¥— |

| | | | | |
|---|----------------------|---------|---------|----|
| At March 31, 2017: | | | | |
| Interest rate and currency swaps: | | | | |
| (floating rate receipt, fixed rate payment) | | | | |
| (U.S.\$ receipt, Japanese yen payment) | Long-term bank loans | ¥32,848 | ¥32,848 | ¥— |

| Thousands of U.S. dollars | | | | |
|---|----------------------|-----------|-----------|-----|
| At March 31, 2018: | | | | |
| Interest rate and currency swaps: | | | | |
| (floating rate receipt, fixed rate payment) | | | | |
| (U.S.\$ receipt, Japanese yen payment) | Long-term bank loans | \$309,887 | \$215,906 | \$— |

The above interest rate and currency swaps which qualify for hedge accounting and meet specific matching criteria are not separated from the hedged bank loans. The fair values of the derivative instruments are reflected in the calculation of the fair values of the related bank loans (see Note 9).

12. Employee Retirement Benefits

The Company has a lump-sum retirement benefit plan and a defined benefit pension plan that cover 80% of the retirement benefits for employees of the Company who retire at the compulsory retirement age after ten years or more of service. Certain domestic consolidated subsidiaries have similar retirement benefit plans. Certain overseas consolidated subsidiaries have defined contribution plans. The Company contributes certain plan assets to the employee retirement benefit trust under the defined benefit pension plan. Net defined benefit liability and retirement benefit costs of certain consolidated subsidiaries are calculated using the simplified method as permitted by the accounting standard for retirement benefits.

Information about employee retirement benefits for the years ended March 31, 2018 and 2017 was as follows:

(a) Defined benefit plans

Movement in retirement benefit obligations, except for plans applying the simplified method:

| | Millions of yen | | Thousands of U.S. dollars |
|---------------------|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Balance at April 1 | ¥68,909 | ¥68,381 | \$650,085 |
| Service cost | 3,765 | 3,751 | 35,519 |
| Interest cost | 418 | 349 | 3,943 |
| Actuarial loss | (1,492) | (1,213) | (14,075) |
| Benefits paid | (2,002) | (2,521) | (18,887) |
| Past service cost | — | 142 | — |
| Other | (355) | 18 | (3,349) |
| Balance at March 31 | ¥69,242 | ¥68,909 | \$653,226 |

Movement in plan assets, except for plans applying the simplified method:

| | Millions of yen | | Thousands of U.S. dollars |
|------------------------------------|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Balance at April 1 | ¥39,893 | ¥36,440 | \$376,349 |
| Expected return on plan assets | 1,130 | 1,054 | 10,660 |
| Actuarial gain | 424 | 932 | 4,000 |
| Contributions paid by the employer | 2,074 | 3,232 | 19,566 |
| Benefits paid | (1,261) | (1,729) | (11,896) |
| Other | (166) | (38) | (1,566) |
| Balance at March 31 | ¥42,094 | ¥39,893 | \$397,113 |

Movement in net defined benefit liability for plans applying the simplified method:

| | Millions of yen | | Thousands of U.S. dollars |
|------------------------------------|-----------------|------|---------------------------|
| | 2018 | 2017 | 2018 |
| Balance at April 1 | ¥247 | ¥245 | \$2,330 |
| Retirement benefit costs | 94 | 43 | 887 |
| Benefits paid | (24) | (19) | (226) |
| Contributions paid by the employer | (22) | (22) | (208) |
| Balance at March 31 | ¥294 | ¥247 | \$2,774 |

Reconciliation from retirement benefit obligations and plan assets to net defined benefit liability:

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Funded retirement benefit obligations | ¥ 49,558 | ¥ 47,786 | \$ 467,528 |
| Plan assets | (42,265) | (40,057) | (398,726) |
| | 7,292 | 7,729 | 68,792 |
| Unfunded retirement benefit obligations | 20,150 | 21,533 | 190,094 |
| Total net defined benefit liability | 27,443 | 29,263 | 258,896 |
| Net defined benefit liability | 27,443 | 29,263 | 258,896 |
| Total net defined benefit liability | ¥ 27,443 | ¥ 29,263 | \$ 258,896 |

Note: Includes those under plans applying the simplified method.

Retirement benefit costs:

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Service cost | ¥ 3,765 | ¥ 3,751 | \$ 35,519 |
| Interest cost | 418 | 349 | 3,943 |
| Expected return on plan assets | (1,130) | (1,054) | (10,660) |
| Net actuarial loss amortization | 1,661 | 2,091 | 15,670 |
| Past service cost amortization | 12 | 22 | 113 |
| Retirement benefit costs based on the simplified method | 94 | 43 | 887 |
| Total | ¥ 4,821 | ¥ 5,204 | \$ 45,481 |

Remeasurements of defined benefit plans included in other comprehensive income (before adjusting for tax effects):

| | Millions of yen | | Thousands of U.S. dollars |
|--------------------|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Past service costs | ¥ (13) | ¥ 119 | \$ (123) |
| Actuarial losses | (3,579) | (4,256) | (33,764) |
| Total | ¥(3,593) | ¥(4,136) | \$(33,896) |

Remeasurements of defined benefit plans included in accumulated other comprehensive income (before adjusting for tax effects):

| | Millions of yen | | Thousands of U.S. dollars |
|--|-----------------|--------|---------------------------|
| | 2018 | 2017 | 2018 |
| Past service cost yet to be recognized | ¥ (28) | ¥ (14) | \$ (264) |
| Actuarial losses yet to be recognized | 4,557 | 8,136 | 42,991 |
| Total | ¥4,528 | ¥8,121 | \$42,717 |

Plan assets:

(1) Plan assets comprise:

| | 2018 | 2017 |
|---------------------------------|------|------|
| Bonds | 29% | 22% |
| Equity securities | 19% | 27% |
| General life insurance accounts | 26% | 25% |
| Alternative investments | 14% | 16% |
| Other | 12% | 10% |
| Total | 100% | 100% |

Notes: 1) Alternative investments are mainly investments in hedge funds and infrastructure funds.

2) As of March 31, 2018 and 2017, 7% and 8% of plan assets, respectively, were assets held by the employee retirement benefit trust under the defined benefit pension plan.

(2) Long-term expected rate of return:

Current and target asset allocation and historical and expected returns on various categories of plan assets have been considered in determining the long-term expected rate of return.

Actuarial assumptions:

The principal actuarial assumptions at March 31, 2018 and 2017 were as follows:

| | 2018 | 2017 |
|-----------------------------------|--------------|--------------|
| Discount rate | Mainly 0.4% | Mainly 0.4% |
| Long-term expected rate of return | Mainly 1.82% | Mainly 2.75% |

Note: In calculating retirement benefit obligations, the NGK Spark Plug Group uses mainly an index for salary increase by age based on a point system.

(b) Defined contribution plans

For the years ended March 31, 2018 and 2017, the amount of required contribution to the defined contribution plans of the overseas consolidated subsidiaries was ¥295 million (\$2,783 thousand) and ¥218 million, respectively.

13. Income Taxes

The tax effects of temporary differences that gave rise to a significant portion of deferred tax assets and liabilities at March 31, 2018 and 2017 were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|----------------------------------|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Deferred tax assets: | | | |
| Net operating loss carryforwards | ¥ 4,084 | ¥ 1,119 | \$ 38,528 |
| Impairment loss on fixed assets | 4,505 | 5,297 | 42,500 |
| Net defined benefit liability | 8,476 | 8,938 | 79,962 |
| Depreciation | 2,481 | 3,125 | 23,406 |
| Accrued expenses | 4,312 | 4,368 | 40,679 |
| Inventories | 2,921 | 2,988 | 27,557 |
| Intercompany profits | 5,457 | 4,762 | 51,481 |
| Other | 2,167 | 1,663 | 20,443 |
| Less valuation allowance | (8,647) | (8,598) | (81,575) |
| Total deferred tax assets | 25,759 | 23,666 | 243,009 |

| | | | |
|---|----------|----------|-----------|
| Deferred tax liabilities: | | | |
| Unrealized gains on available-for-sale securities | (13,807) | (12,116) | (130,255) |
| Retained earnings of overseas consolidated subsidiaries | (3,357) | (2,943) | (31,670) |
| Depreciation | (798) | (1,106) | (7,528) |
| Other | (294) | (303) | (2,774) |
| Total deferred tax liabilities | (18,257) | (16,469) | (172,236) |
| Net deferred tax assets | ¥ 7,502 | ¥ 7,196 | \$ 70,774 |

At March 31, 2018 and 2017, deferred tax assets and liabilities were as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|---------------------------|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Deferred tax assets: | | | |
| Current | ¥12,427 | ¥11,023 | \$117,236 |
| Noncurrent | 3,042 | 1,496 | 28,698 |
| Deferred tax liabilities: | | | |
| Noncurrent | (7,967) | (5,324) | (75,160) |
| Net deferred tax assets | ¥ 7,502 | ¥ 7,196 | \$ 70,774 |

In assessing the realizability of deferred tax assets, management of the NGK Spark Plug Group considers whether some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which the temporary differences become deductible. At March 31, 2018 and 2017, a valuation allowance was provided to reduce deferred tax assets to the amount that management believed the deferred tax assets were realizable.

For the years ended March 31, 2018 and 2017, the reconciliation of the differences between the combined Japanese statutory tax rate and the effective income tax rate on pretax income reflected in the accompanying consolidated statements of income was as follows.

| | Percentage of pre-tax income (%) | |
|---|----------------------------------|-------|
| | 2018 | 2017 |
| Combined Japanese statutory tax rate | 30.7 | 30.7 |
| Increase (decrease) due to: | | |
| Permanently nondeductible expenses | 0.3 | 0.7 |
| Tax exempt income | (0.8) | (0.4) |
| Tax credits for research and development expenses | (4.7) | (6.2) |
| Differences between Japanese and foreign tax rates | (1.0) | (2.9) |
| Changes in valuation allowance | (1.8) | 11.9 |
| Retained earnings of overseas consolidated subsidiaries | 0.7 | (7.9) |
| Loss on violation of antitrust law | 2.0 | 0.1 |
| Transfer of net loss carried forward resulting from merger of a consolidated subsidiary | — | (6.5) |
| Impairment loss on goodwill | — | 6.6 |
| Other | 0.2 | (0.7) |
| Effective income tax rate | 25.6 | 25.4 |

14. Business combinations

For the year ended March 31, 2017

(a) Completion of accounting for the business combination following provisional accounting

The accounting with regard to the business combination for the acquisition of Wells as of July 1, 2016 was completed in the current fiscal year. Due to the completion of accounting for this business combination, the change in initial purchase price allocation was reflected in the comparative information included in the consolidated financial statements of the current fiscal year as follows:

| | Millions of yen |
|-----------------------------|-----------------|
| Goodwill (pre-adjustment) | ¥10,192 |
| Other intangible assets | 176 |
| Deferred tax liabilities | (67) |
| Total Adjustment | 109 |
| Goodwill (after-adjustment) | ¥10,302 |

As a result, goodwill increased by ¥93 million, other intangible assets decreased by ¥150 million, and total intangible assets, total noncurrent assets and total liabilities each decreased by ¥57 million. Because sales, general and administrative expenses decreased by ¥4 million, operating income, ordinary income and profit before income taxes for the previous fiscal year also increased by that amount.

(b) Business combination under common control

The Company, NTK Ceramic Co., Ltd., (former N-CERA) and NTK Ceramic Co., Ltd. (new N-CERA) and Ceramic Sensor Nakatsugawa Co., Ltd. which were newly established as of July 1, 2016 conducted an absorption-type company split as of October 1, 2016 subject to the Absorption-type Company Split Agreement concluded as of July 29, 2016.

(1) Overview of the combination

1. Name and nature of the split business

i) Split company

| Company name | Name and nature of the split business |
|---------------------------------------|---|
| NGK Spark Plug Co., Ltd. | Ceramic IC packages |
| NTK Ceramic Co., Ltd. (former N-CERA) | Ceramic IC packages Automotive sensors |

ii) Successor company

| Company name | Name and nature of the split business |
|--------------------------------------|---------------------------------------|
| NTK Ceramic Co., Ltd. (new N-CERA) | Ceramic IC packages |
| Ceramic Sensor Nakatsugawa Co., Ltd. | Automotive sensors |

2. Date of the combination

October 1, 2016

3. Legal form of the combination

Absorption-type company split with the split companies and successor companies as the Company and former N-CERA and new N-CERA and Ceramic Sensor Nakatsugawa Co., Ltd., respectively.

4. Name of the acquired company after the combination

NTK Ceramic Co., Ltd. (new N-CERA)
Ceramic Sensor Nakatsugawa Co., Ltd.

5. Other matters relating to overview of transaction

Toward the revitalization of our ceramic IC package business, we will establish a financially independent subsidiary with manufacturing and sales functions consolidated instead of the subsidiary with manufacturing functions only. With this reform, we aim to clarify responsibilities and authority, better visualize the financial management and achieve a positive turnaround as early as possible.

The Company merged former N-CERA as of January 1, 2017.

(2) Overview of accounting treatment adopted

The combination is accounted for as a business combination under common control based on the “Accounting Standard for Business Combinations” (ASBJ Statement No. 21) and the “Guidance on the Accounting Standard for Business Combinations and Accounting Standard for Business Divestitures” (ASBJ Guidance No. 10).

15. Net Assets

Under Japanese laws and regulations, the entire amount paid for new shares is required to be designated as common stock. However, a company may, by a resolution of the Board of Directors, designate an amount not exceeding one half of the price of the new shares as additional paid-in capital, which is included in capital surplus.

Under Japanese Corporate Law (the “Law”), in cases in which a dividend distribution of surplus is made, the smaller of an amount equal to 10% of the dividend or the excess, if any, of 25% of common stock over the total of additional paid-in capital and legal earnings reserve must be set aside as additional paid-in capital or legal earnings reserve. Legal earnings reserve is included in retained earnings in the accompanying consolidated balance sheets.

Under the Law, legal earnings reserve and additional paid-in capital can be used to eliminate or reduce a deficit by a resolution of the shareholders’ meeting. Additional paid-in capital and legal earnings reserve may not be distributed as dividends. All additional paid-in capital and all legal earnings reserve may be transferred to other capital surplus and retained earnings, respectively, which are potentially available for dividends.

At March 31, 2018 and 2017, respectively, capital surplus consisted principally of additional paid-in capital. In addition, retained earnings included legal earnings reserve of the Company in the amount of ¥5,837 million (\$55,066 thousand) at March 31, 2018 and 2017, respectively.

The maximum amount that the Company can distribute as dividends is calculated based on the separate financial statements of the Company in accordance with Japanese laws and regulations.

16. Segment Information

(a) General information about reportable segments

The reportable segments of the Company are the business units for which the Company is able to obtain financial information separately in order for the Board of Directors of the Company to conduct periodic investigations to determine the distribution of management resources and evaluate business results. The Company has its business units identified by products. Each business unit plans its own comprehensive domestic and overseas strategies for its own products and conducts its own business activities. Accordingly, the NGK Spark Plug Group consists of two reportable segments: “Automotive components” and “Technical ceramics.” The “Technical ceramics” segment consists of the “Semiconductor” and “Ceramics” subsegments.

- In the “Automotive components” segment, the Company manufactures and sells spark plugs, glow plugs, various automotive sensors, ceramic engine parts and other automotive components.
- In the “Technical ceramics” segment, the Company manufactures and sells IC packages and other semiconductor components in the “Semiconductor” subsegment and manufactures and sells cutting tools and ceramics products for industrial use in the “Ceramics” subsegment.

(b) Methods to determine net sales, income or loss, assets, and other items by reportable business segment

Accounting methods by reportable segment are principally the same as those written in Note 2 Summary of Significant Accounting Policies. Profit by reportable business segment is stated on an operating income basis.

(c) Information about reportable segment profit and loss, segment assets and other material items

Information about reportable segments as of and for the years ended March 31, 2018 and 2017 was as follows:

| | Reportable segments | | | | | Other | Total | Adjustments | Consolidated |
|---|-----------------------|--------------------|----------|--------------------------|----------|--------|----------|-------------|--------------|
| | Automotive components | Technical ceramics | | | | | | | |
| | | Semiconductor | Ceramics | Total Technical ceramics | | | | | |
| Millions of yen | | | | | | | | | |
| For the year 2018: | | | | | | | | | |
| Operating revenue - net sales: | | | | | | | | | |
| External customers | ¥348,198 | ¥17,901 | ¥39,834 | ¥57,735 | ¥405,934 | ¥3,977 | ¥409,912 | ¥— | ¥409,912 |
| Intersegment sales | — | — | — | — | — | — | — | — | — |
| Total net sales | 348,198 | 17,901 | 39,834 | 57,735 | 405,934 | 3,977 | 409,912 | — | 409,912 |
| Segment income (loss) | ¥ 68,098 | ¥ (2,571) | ¥ 1,589 | ¥ (982) | ¥ 67,116 | ¥ 163 | ¥ 67,279 | ¥— | ¥ 67,279 |
| Segment assets | ¥510,884 | ¥28,924 | ¥66,599 | ¥95,523 | ¥606,408 | ¥1,361 | ¥607,769 | ¥— | ¥607,769 |
| Other items: | | | | | | | | | |
| Depreciation | ¥ 17,429 | ¥ 730 | ¥ 2,754 | ¥ 3,484 | ¥ 20,914 | ¥ 6 | ¥ 20,920 | ¥— | ¥ 20,920 |
| Increase in property, plant and equipment and intangible assets | 29,525 | 2,452 | 5,611 | 8,063 | 37,589 | 1 | 37,591 | — | 37,591 |

For the year 2017:

| | | | | | | | | |
|--------------------------------|----------|-----------|---------|-----------|----------|--------|----------|----|
| Operating revenue - net sales: | | | | | | | | |
| External customers | ¥318,149 | ¥19,449 | ¥31,855 | ¥51,305 | ¥369,454 | ¥3,464 | ¥372,919 | ¥— |
| Intersegment sales | — | — | — | — | — | — | — | — |
| Total net sales | 318,149 | 19,449 | 31,855 | 51,305 | 369,454 | 3,464 | 372,919 | — |
| Segment income (loss) | ¥ 57,988 | ¥ (4,842) | ¥ 400 | ¥ (4,441) | ¥ 53,546 | ¥ 49 | ¥ 53,595 | ¥— |
| Segment assets | ¥478,647 | ¥30,246 | ¥53,603 | ¥83,849 | ¥562,497 | ¥1,304 | ¥563,801 | ¥— |

Notes to Consolidated Financial Statements

| | | | | | | | | | |
|---|-------------|-------------|-----------|------------|-------------|----------|-------------|-----|-------------|
| Other items: | | | | | | | | | |
| Depreciation | ¥ 17,158 | ¥ 308 | ¥ 2,123 | ¥ 2,431 | ¥ 19,590 | ¥ 10 | ¥ 19,601 | ¥— | ¥ 19,601 |
| Impairment loss on fixed assets | 20,187 | — | — | — | 20,187 | — | 20,187 | — | 20,187 |
| Increase in property, plant and equipment and intangible assets | 27,577 | 2,364 | 6,383 | 8,747 | 36,325 | 2 | 36,328 | — | 36,328 |
| Thousands of U.S. dollars | | | | | | | | | |
| For the year 2018: | | | | | | | | | |
| Operating revenue - net sales: | | | | | | | | | |
| External customers | \$3,284,887 | \$168,877 | \$375,792 | \$544,670 | \$3,829,566 | \$37,519 | \$3,867,094 | \$— | \$3,867,094 |
| Intersegment sales | — | — | — | — | — | — | — | — | — |
| Total net sales | 3,284,887 | 168,877 | 375,792 | 544,670 | 3,829,566 | 37,519 | 3,867,094 | — | 3,867,094 |
| Segment income (loss) | \$ 642,434 | \$ (24,255) | \$ 14,991 | \$ (9,264) | \$ 633,170 | \$ 1,538 | \$ 634,708 | \$— | \$ 634,708 |
| Segment assets | \$4,819,660 | \$272,868 | \$628,292 | \$901,160 | \$5,720,830 | \$12,840 | \$5,733,670 | \$— | \$5,733,670 |
| Other items: | | | | | | | | | |
| Depreciation | \$ 164,425 | \$ 6,887 | \$ 25,981 | \$ 32,868 | \$ 197,302 | \$ 57 | \$ 197,358 | \$— | \$ 197,358 |
| Increase in property, plant and equipment and intangible assets | 278,538 | 23,132 | 52,934 | 76,066 | 354,613 | 9 | 354,632 | — | 354,632 |

Note: The "Other" segment includes business such as material sales, welfare program services and transportation not included in reportable segments.

(d) Related information

i) Information on products and services

Information on products and services is the same as that already reported in (c) Information about reportable segment profit and loss, segment assets and other material items. Therefore, the information is omitted here.

ii) Geographic information

Information about geographic areas as of and for the years ended March 31, 2018 and 2017 was as follows:

| | Millions of yen | | Thousands of U.S. dollars |
|--------------------------------|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Operating revenue - net sales: | | | |
| Japan | ¥ 67,467 | ¥ 61,947 | \$ 636,481 |
| North America | 108,259 | 104,357 | 1,021,311 |
| Europe | 107,052 | 96,170 | 1,009,925 |
| Asia | 81,468 | 70,109 | 768,566 |
| Other area | 45,663 | 40,334 | 430,783 |
| | ¥409,912 | ¥372,919 | \$3,867,094 |

Note: Net sales are categorized by country or region based on the location of the customer.

| | Millions of yen | | Thousands of U.S. dollars |
|--------------------------------|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Property, plant and equipment: | | | |
| Japan | ¥154,401 | ¥146,415 | \$1,456,613 |
| Asia | 20,923 | 17,811 | 197,387 |
| Other area | 19,777 | 17,075 | 186,575 |
| | ¥195,102 | ¥181,302 | \$1,840,585 |

(Change in presentation)

Assets in "Asia," which was included in "Other area" for the previous fiscal year, exceeded 10% of total assets in the consolidated balance sheet for the year ended March 31, 2018 and is, therefore, presented separately for and from the current fiscal year. To provide a consistent presentation format, property, plant and equipment in geographic information for the previous fiscal year has been reclassified to conform with the current year presentation.

iii) Information by major customer

The NGK Spark Plug Group had no single external customer which accounted for more than 10% of net sales for the years ended March 31, 2018 or 2017.

(e) Information about impairment of fixed asset by business segment.

Information about impairment of fixed assets is presented in (c) Information about reportable segment profit and loss, segment assets and other material items.

(f) Information about goodwill as of and for the years ended March 31, 2018 and 2017 was as follows:

| | Reportable segments | | | | | Other | Total | Adjustments | Consolidated |
|---------------------------|-----------------------|--------------------|----------|--------------------------|---------|-------|---------|-------------|--------------|
| | Automotive components | Technical ceramics | | | Total | | | | |
| | | Semiconductor | Ceramics | Total Technical ceramics | | | | | |
| Millions of yen | | | | | | | | | |
| March 31, 2018 | | | | | | | | | |
| Amortization | ¥ — | ¥— | ¥153 | ¥153 | ¥ 153 | ¥— | ¥ 153 | ¥— | ¥ 153 |
| Balance | — | — | 307 | 307 | 307 | — | 307 | — | 307 |
| March 31, 2017 | | | | | | | | | |
| Amortization | ¥910 | ¥— | ¥153 | ¥153 | ¥1,064 | ¥— | ¥1,064 | ¥— | ¥1,064 |
| Balance | — | — | 460 | 460 | 460 | — | 460 | — | 460 |
| Thousands of U.S. dollars | | | | | | | | | |
| March 31, 2018 | | | | | | | | | |
| Amortization | \$— | \$— | \$1,443 | \$1,443 | \$1,443 | \$— | \$1,443 | \$— | \$1,443 |
| Balance | — | — | 2,896 | 2,896 | 2,896 | — | 2,896 | — | 2,896 |

Note: For the year ended March 31, 2017, the NGK Spark Plug Group recognized impairment loss on goodwill in the amount of ¥7,513 million in the Automotive components segment.

(g) Information about negative goodwill by business segment.

No items to report.

17. Information on Related Parties

No items to report.

18. Per Share Information

Basic and diluted net assets per share and earnings per share for the years ended March 31, 2018 and 2017, were as follows:

| | Yen | | U.S. dollars |
|----------------------------|-----------|-----------|--------------|
| | 2018 | 2017 | 2018 |
| Basic net assets per share | ¥1,837.46 | ¥1,660.06 | \$17.33 |
| Basic earnings per share | 209.37 | 119.44 | 1.98 |

(a) Basis for calculation of net assets per share

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|----------|---------------------------|
| | 2018 | 2017 | 2018 |
| Total net assets | ¥388,115 | ¥354,710 | \$3,661,462 |
| Amount deducted from total net assets | 2,454 | 2,404 | 23,151 |
| of which, noncontrolling interests | (2,454) | (2,404) | (23,151) |
| Net assets allocated to common stock | 385,661 | 352,305 | 3,638,311 |
| Number of shares of common stock outstanding at fiscal year-end used in calculation of net assets per share (thousands) | 209,888 | 212,224 | 1,980,075 |

(b) Basis for calculation of earnings per share

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Profit attributable to owners of the parent | ¥ 44,335 | ¥25,602 | \$ 418,255 |
| Amount not attributable to common stock shareholders | — | — | — |
| Profit attributable to common stock owners of the parent | 44,335 | 25,602 | 418,255 |
| Weighted average number of shares of common stock (thousands) | 211,758 | 214,349 | 1,997,717 |

Notes: 1) As the Company had no dilutive shares at March 31, 2018 or 2017, the Company has not disclosed diluted net income per share for the years ended March 31, 2018 and 2017.

2) Shares held by the officer compensation BIP trust are included in treasury stock, which is deducted from the number of shares at the fiscal year-end and the weighted average number of shares. The number of shares held by the officer compensation BIP trust at the current fiscal year-end was 433 thousand and the weighted average number of shares was 288 thousand. There were no shares held by the officer compensation BIP trust in the previous fiscal year.

19. Significant subsequent events

(a) Repurchase and retirement of stock

The Company resolved at a meeting of its Board of Directors held on February 26, 2018 to repurchase its own shares pursuant to the provisions of Article 459, Paragraph 1 of the Companies Act and to cancel the repurchased shares pursuant to the provisions of Article 178. The details of the stock repurchase after March 31, 2018 pursuant to the resolution of the meeting of its Board of Directors held on February 26, 2018 were as follows:

| | |
|---------------------------------------|--|
| 1. Type of stock repurchased | Common stock |
| 2. Total number of shares repurchased | 1,732,400 shares |
| 3. Total price of repurchase | ¥4,999 million (\$47,160 thousand) |
| 4. Repurchase period | April 1, 2018 to May 30, 2018 (Commitment basis) |
| 5. Method of repurchase | Market purchase on the Tokyo Stock Exchange |

The repurchase of stock pursuant to the resolution of the meeting of its Board of Directors held on February 26, 2018 has been completed.

The results of the repurchase of stock were as follows:

| | |
|---------------------------------------|--|
| 1. Type of stock repurchased | Common stock |
| 2. Total number of shares repurchased | 3,633,200 shares |
| 3. Total price of repurchase | ¥9,999 million (\$94,330 thousand) |
| 4. Repurchase period | February 27, 2018 to May 30, 2018 (Commitment basis) |
| 5. Method of repurchase | Market purchase on the Tokyo Stock Exchange |

The Company cancelled the treasury stock resulting from the repurchase pursuant to the resolution of the meeting of its Board of Directors held on February 26, 2018.

| | |
|---|--|
| 1. Type of stock cancelled | Common stock |
| 2. Total number of shares cancelled | 3,633,200 shares (Percentage to the total number of issued shares before cancellation: 1.71%) |
| 3. Date of cancellation | June 8, 2018 |
| 4. The total number of issued shares after the cancellation | 208,911,620 shares |

(b) Issuance of unsecured straight bonds

The Company issued the eighth series unsecured straight bonds and the ninth series unsecured straight bonds on June 14, 2018.

| Eighth series unsecured straight bonds | |
|--|---|
| 1. Total amount of issue | ¥10,000 million (\$94,340 thousand) |
| 2. Issue price | ¥100 per face value of ¥100 |
| 3. Redemption price | ¥100 per face value of ¥100 |
| 4. Interest rate | 0.110% per annum |
| 5. Payment date | June 14, 2018 |
| 6. Maturity date | June 14, 2023 |
| 7. Principal redemption method | Lump-sum redemption at maturity |
| 8. The purpose of bond issue | Capital investment and repayment of corporate bonds |

Ninth series unsecured straight bonds

| | |
|--------------------------------|---|
| 1. Total amount of issue | ¥10,000 million (\$94,340 thousand) |
| 2. Issue price | ¥100 per face value of ¥100 |
| 3. Redemption price | ¥100 per face value of ¥100 |
| 4. Interest rate | 0.370% per annum |
| 5. Payment date | June 14, 2018 |
| 6. Maturity date | June 14, 2028 |
| 7. Principal redemption method | Lump-sum redemption at maturity |
| 8. The purpose of bond issue | Capital investment and repayment of corporate bonds |

20. Borrowings

(a) Bonds payable at March 31, 2018 and 2017, comprised the following:

| | Millions of yen | | Thousands of U.S. dollars |
|---|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| 0.391% unsecured bonds due September 2018 | ¥25,000 | ¥25,000 | \$235,849 |
| 0.296% unsecured bonds due October 2020 | 30,000 | 30,000 | 283,019 |
| Total | ¥55,000 | ¥55,000 | \$518,868 |

Note: The aggregate annual maturities of bonds payable after March 31, 2018, are as follows:

| Year ending March 31, | Millions of yen | Thousands of U.S. dollars |
|-----------------------|-----------------|---------------------------|
| 2019 | ¥25,000 | \$235,849 |
| 2020 | — | — |
| 2021 | 30,000 | 283,019 |
| 2022 | — | — |
| 2023 | — | — |

(b) Loans payable and lease obligations at March 31, 2018 and 2017, comprised the following:

| | Millions of yen | | Thousands of U.S. dollars |
|--|-----------------|---------|---------------------------|
| | 2018 | 2017 | 2018 |
| Short-term loans payable with interest rate of 2.85% | ¥10,113 | ¥11,259 | \$ 95,406 |
| Current portion of long-term loans payable with interest rate of 0.30% | 9,962 | — | 93,981 |
| Current portion of lease obligations | 43 | 87 | 406 |
| Long-term loans payable (except portion due within one year) with interest rate of 0.16% | 22,886 | 32,848 | 215,906 |
| Lease obligations (except portion due within one year) | 111 | 80 | 1,047 |
| Other | — | — | — |
| Total | ¥43,115 | ¥44,275 | \$406,745 |

Notes: 1) Interest rates shown are weighted average interest rates for the balance outstanding at March 31, 2018.
2) Average interest rates for lease obligations are omitted because lease obligations include assumed interest amounts.
3) The aggregate annual maturities of long-term loans payable and lease obligations (except portion due within one year) after March 31, 2018, are as follows:

| Year ending March 31, | Long-term loans payable | | Lease obligations | |
|-----------------------|-------------------------|---------------------------|-------------------|---------------------------|
| | Millions of yen | Thousands of U.S. dollars | Millions of yen | Thousands of U.S. dollars |
| 2020 | ¥9,924 | \$93,623 | ¥53 | \$500 |
| 2021 | 4,962 | 46,811 | 29 | 274 |
| 2022 | 8,000 | 75,472 | 20 | 189 |
| 2023 | — | — | 7 | 66 |

21. Asset Retirement Obligation

Information is omitted due to immateriality.

Independent Auditor’s Report



Independent Auditor’s Report

To the Board of Directors of
NGK SPARK PLUG CO., LTD.:

We have audited the accompanying consolidated financial statements of NGK SPARK PLUG CO., LTD. and its consolidated subsidiaries (the “NGK Spark Plug Group”), which comprise the consolidated balance sheets as at March 31, 2018 and 2017, and the consolidated statements of income, consolidated statements of comprehensive income, consolidated statements of changes in net assets and consolidated statements of cash flows for the years then ended, and a summary of significant accounting policies and other explanatory information.

Management’s Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in Japan, 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.

Auditor’s Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in Japan. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity’s preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, while the objective of the financial statement audit is not for the purpose of expressing an opinion on the effectiveness of the entity’s internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the NGK Spark Plug Group as at March 31, 2018 and 2017, and their financial performance and cash flows for the years then ended in accordance with accounting principles generally accepted in Japan.

Convenience Translation

The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended March 31, 2018 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 1 of Notes to the consolidated financial statements.

KPMG AZSA LLC

July 27, 2018
Nagoya, Japan

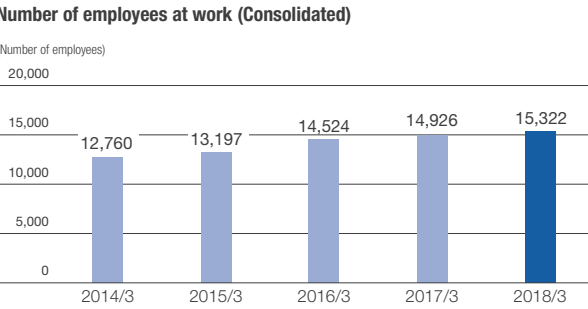
KPMG AZSA LLC, a limited liability audit corporation incorporated under the Japanese Certified Public Accountants Law and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity.

Corporate Profile and Stock Information

Independent Verification Report

Corporate Data

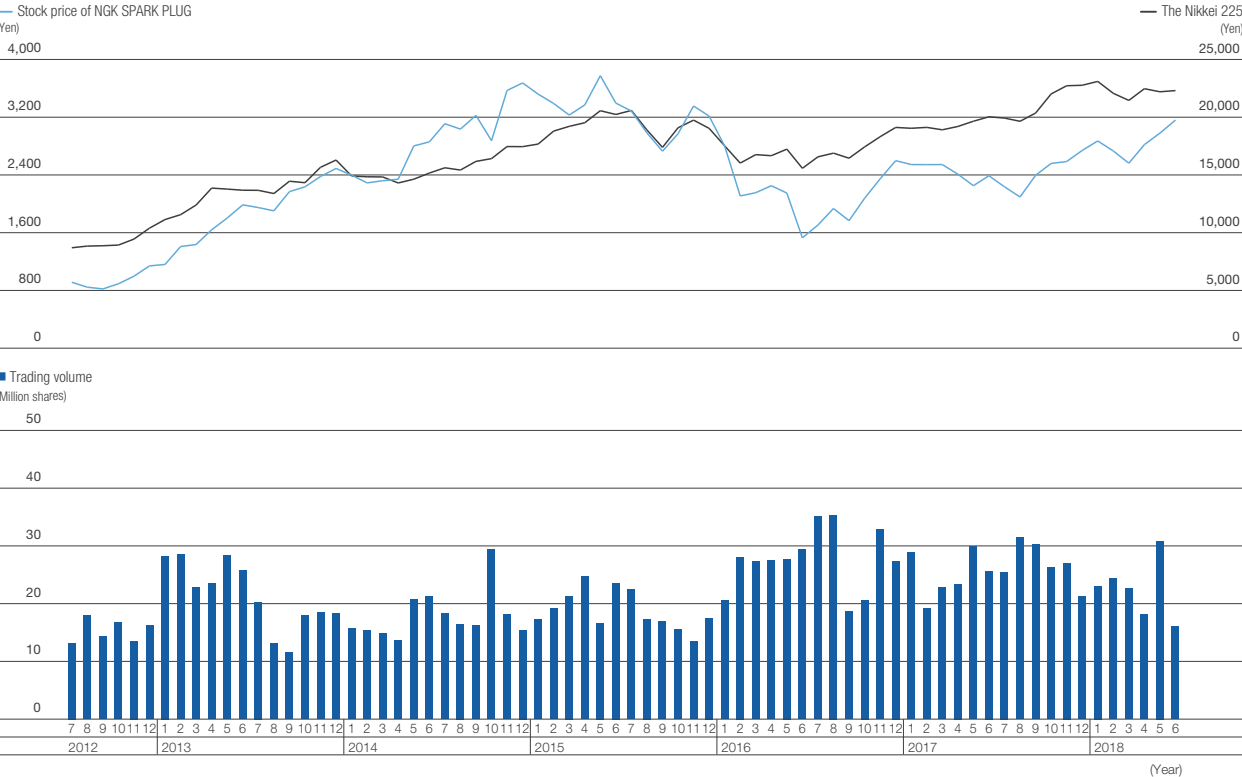
NGK SPARK PLUG CO., LTD.
■ Headquarters 14-18 Takatsuji-cho, Mizuho-ku, Nagoya 467-8525, Japan
■ Established October 1936
■ Number of Employees Non-Consolidated: 5,851 (March 2018)
Consolidated: 15,322 (March 2018)



Number of Shares and Shareholders

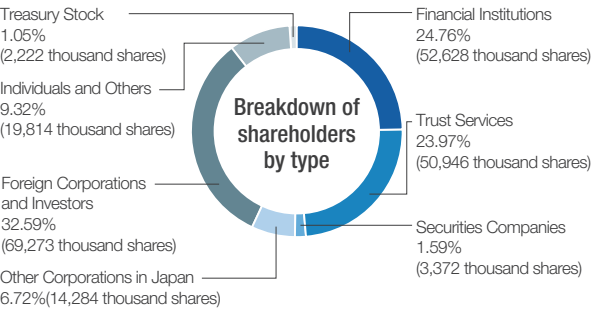
■ Paid-in Capital ¥47,869 million
■ Total number of authorized shares 390,000,000
■ Total number of issued shares 212,544,820
■ Listed market First section of the Tokyo Stock Exchange and Nagoya Exchange
■ Shareholder registry administrator Mitsubishi UFJ Trust and Banking Corporation
■ Accounting auditor KPMG AZSA LLC
■ Number of shareholders 16,875

Stock price/trading volume



*Trading volume does not include trades via the ToSTNet system.

Breakdown of shareholders by type



Major Shareholders

| Name of shareholders | Shares held (thousands) | Ownership ratio (%) |
|---|-------------------------|---------------------|
| The Dai-ichi Life Insurance Company, Limited | 16,752 | 7.96 |
| Meiji Yasuda Life Insurance Company | 14,375 | 6.83 |
| The Master Trust Bank of Japan, Ltd. (Trust Account) | 13,460 | 6.39 |
| Japan Trustee Services Bank, Ltd. (Trust Account) | 11,498 | 5.46 |
| National Mutual Insurance Federation of Agricultural Cooperatives | 6,658 | 3.16 |
| MUFG Bank, Ltd. | 6,541 | 3.11 |
| STATE STREET BANK AND TRUST COMPANY | 5,861 | 2.78 |
| The Master Trust Bank of Japan, Ltd. (for Toyota Motor Corporation) | 3,929 | 1.86 |
| Nippon Life Insurance Company | 3,563 | 1.69 |
| TOTO Ltd. | 3,433 | 1.63 |



No.1811003164

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 "FY2017* 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, Water Usage, Waste Amount and Injury Frequency Rate in the Report was correctly measured and calculated, in accordance with the "Rule for Environmental Data Calculations" and "Standard for Calculating the Injury Frequency Rates (ZESAF-001, as of June 1, 2018)" (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 2017 of the Company ended on March 31, 2018.

2. Procedures Performed

JQA conducted verification in accordance with "ISO 14064-3" for GHG emissions and with "ISAE3000" for Water Usage, Waste Amount and Injury Frequency Rate, respectively. The scope of this verification assignment covers energy-derived CO2 emissions from Scope 1, 2 as GHG emissions, Water Usage, Waste Amount and Injury Frequency Rate. The verification was conducted to a limited level of assurance and quantitative materiality was set at 5 percent each of the total emissions and total amount of Water Usage and Injury Frequency Rate in the Report.

The organizational boundaries of this verification include the domestic and international Group sites (38 domestic sites and 27 international sites).

Our verification procedures included:

- Visiting three domestic sites: NGK SPARK PLUG CO., LTD. Head Office and Nagoya Plant, NGK SPARK PLUG CO., LTD. Kagoshima-Miyanojo Plant and NGK SPARK PLUG CO., LTD. Ise Plant, 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. Head Office and Nagoya Plant for validation of the Rules and verification of Injury Frequency Rates.

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 FY2017 GHG emissions, Water Usage, Waste Amount and Injury 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, Water use, Waste amount and Injury 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, Kandusadacho, Chiyoda-ku, Tokyo, Japan
August 7, 2018

NGK SPARK PLUG CO., LTD.

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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.