



IGNITE YOUR SPIRIT

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Editorial Policy

The CSR Report 2018 is edited with the intention of informing all of our various Stakeholders about the CSR activities of the NGK SPARK PLUG Group.

[Period covered]

From April 1, 2017 to March 31, 2018

Some other very recent activities and cases are also included.

[Organizations Covered]

- Social aspects: NGK SPARK PLUG CO., LTD.

However, this Report may also cover the activities of subsidiaries and affiliates inside and outside Japan. In such cases, specific company names are indicated.

- Environmental aspects: NGK SPARK PLUG Group
 - NGK SPARK PLUG CO., LTD.
 - 11 consolidated subsidiaries and one affiliate in Japan

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Our CSR

CSR Concept

We view CSR not just as a responsibility but as an opportunity to be accountable through review of the NGK SPARK PLUG's 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 include the following:

Examples

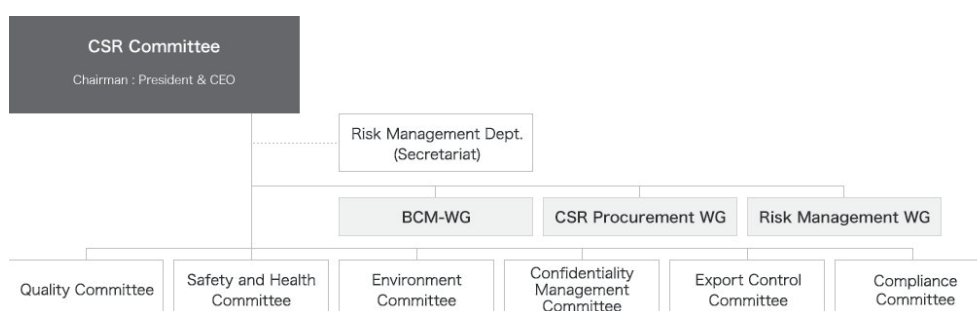
- Offering excellent products to customers
- Disclosing corporate information to shareholders and the broader investor community in a readily understandable way as well as timely and appropriately manner
- Collaborating with suppliers for mutual development
- Establishing a safe and employee-friendly working environment
- Participating in and supporting activities in the local community

To provide our Group's action guidelines for fulfilling CSR, in April 2011 our CSR Policy was established, which comprises 10 policies, such as the Compliance Policy and others. In line with the CSR Policy, we intend to review and promote CSR based on a multifaceted approach.

CSR Promotion System

The CSR Committee determines the priority themes for each fiscal year, to implement CSR Policy. The Committee also oversees and evaluates CSR-related activities implemented by the respective committees, working groups and divisions, and makes appropriate proposals regarding them, so as to achieve full optimization of CSR activities, thereby strengthening our business foundations.

The CSR Committee sets up respective working group as deemed appropriate, each of which holds discussions on specific themes to develop countermeasures. We have established a company-wide CSR promotion system by securing close coordination between the CSR Committee, the CSR Promotion Sub-Committee and expert committees. In line with the CSR Policy, we intend to review and promote CSR based on a multifaceted approach.



CSR Awareness-raising Activities

We have been running elementary CSR training courses since 2014 as one of our awareness-raising activities so that every employee feels more familiar with CSR.

The training is expected to lead them to change in attitudes toward work, enhancement of motivation, and higher pride in the company through awareness of their connections with society as well as their contributions to society. Starting in 2017—CSR Promotion System—employees who work for our group companies in Japan who are now teaching those same courses to other newly incoming employees.

In addition, we regularly publish the CSR Newsletter and hold lectures by experts, aiming at continuous CSR awareness-raising activities.



Training (Ceramic Sensor)

Participation in "United Nations global compact"

NGK SPARK PLUG CO., LTD. Participated in "United Nations global compact" in November 2016.

"United Nations global compact" is a voluntary corporate citizenship in order to address various problems such as global warming, environmental problems, gap-widening society that are progressing on a global scale. They are also initiatives that were proposed by Kofi Annan, the Secretary-General of the United Nations in 1999, and established formally by the U.N. in July 2000.

NGK SPARK PLUG CO., LTD. will uphold ten principles consisted of four issues such as "Human rights, Labour, Environment, Anti-corruption" being advocated by the U.N. global compact as good members of society, and will make every effort to promote activities in order to contribute to building a sustainable society.



The Ten Principles of the UN Global Compact

【Human Rights】

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights.

Principle 2: make sure that they are not complicit in human rights abuses.

【Labour】

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.

Principle 4: the elimination of all forms of forced and compulsory labour.

Principle 5: the effective abolition of child labour.

Principle 6: the elimination of discrimination in respect of employment and occupation.

【Environment】

Principle 7: Businesses should support a precautionary approach to environmental challenges.

Principle 8: undertake initiatives to promote greater environmental responsibility.

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

【Anti-Corruption】

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Our contributions to SDGs

We will work to achieve SDGs (Sustainable Development Goals: SDGs*) that were adopted by the United Nations in 2015.

*What are SDGs?

SDGs consist of the 17 goals and 169 targets that were adopted at the UN Summit which aim to solve worldwide problems such as poverty, inequality and climate change by 2030—pledging that “No one will be left behind.”



Progress in our CSR

Nov. 1996	Adopted "Corporate Philosophy"
Feb. 1998	Adopted "Corporate Code of Conduct"
Apr. 1998	Established Ethical Committee
Feb. 2003	Adopted "Corporate Ethics Helpline System Operation Guidelines"
Nov. 2004	Revised "Corporate Code of Conduct", published "Code of Conduct Guidebook"
Apr. 2005	Published "Guidelines on the Handling of Personal Information"
Aug. 2005	Established Export Control Committee, adopted "Export Management Regulations"
Feb. 2007	Adopted "Confidentiality Management Regulations"
Nov. 2007	Published "Confidentiality Management Guidelines"
Sep. 2008	Established Internal Audit Department
Apr. 2009	Prepared "Corporate Protection Manual"
Apr. 2010	Inaugurated CSR Promotion Department
Oct. 2010	Established CSR Committee
Apr. 2011	Adopted CSR Policy
Nov. 2011	Established Compliance Committee
Jan. 2012	Published "Compliance Guidebook"
Mar. 2012	Adopted "Compliance Regulations"
Oct. 2012	Adopted "Emergency Response Plan Regulations" and "Business Continuity Plan (BCP) Regulations"
May. 2013	Published "CSR Procurement Guidelines"
Jul. 2014	Launched "CSR Awareness-raising Activities"
Nov. 2016	Participated in "United Nations global compact"
Aug. 2017	Published "Integrated Report"

Process for defining materiality and CSR targets

Defining the materiality of our priority CSR themes

In 2016, we defined the materiality of our priority CSR themes. We also established 10 fields of activities and 41 medium-term targets based on the 7th Medium-term Management Plan.

Going forward, we will repeatedly conduct dialog with major stakeholders, including customers, suppliers, shareholders and investors, employees and the local communities, while pursuing stakeholder engagement and continuing to review materiality and targets in line with the times. We will continue to identify materiality and review our goals according to the needs of the time such as SDGs*

*SDGs (Sustainable Development Goals) are the goals adopted in 2015 at the United Nations. These goals are set to be achieved by UN member states by 2030.

Definition process for the materiality of priority themes

Evaluation of Materiality : Policy / Target Setting

2010 – 2012

- Establish new CSR Policy
- Set “complete prevalence of CSR” as our medium-term theme for the fifth Medium-term Management Plan (fiscal 2010 – 2012)

2013 – 2014

- Set Complete prevalence of CSR application, and globalize CSR activities as the medium-term theme in the sixth Medium-term Management Plan (fiscal 2013 - 2015) and established 10 fields of activities and 30 CSR medium-term targets.

2015

- Establish 10 fields of activities and 42 targets to aim "Progressive Company" as the 7th Medium-term Management Plan (fiscal 2016 – 2020)

Evaluation of Materiality : Risk (Loss and Opportunity) Analysis

2010 - 2012

- Implemented CSR fact finding survey (management and performance of principle departments). As a result, "compliance", "business continuity plan (BCP)", and "information disclosure" identified as three priority medium-term initiatives.

2013 - 2016

- Implemented risk survey after identifying risk management as the medium-term priority initiative. As a result, compiled 370 specific examples with 22 classifications and 101 definitions and identified 21 material risks on two axes of degree of materiality and implementation status.

2017

- Choose "Promoting BCM (Business Continuity Management)" and "Preventing corruption" identified as our group's priority risk management initiatives.

Evaluation of Materiality: Dialogue with Important Stakeholders

2010 - 2017

- Held environmental meetings (local communities, NGK SPARK PLUG)
- Gap analysis of our CSR and SRI evaluation
- Participated in local disaster prevention meetings (government, citizens, NPOs, corporations)
- Participated in information exchange meetings with neighboring companies held at Chamber of Commerce and Industry

Activity Review

2010 - 2012

- CSR Policy determined by the Board of Directors. Three priority initiatives reviewed by CSR Committee

2013 - 2016

- Important risk responses reviewed by CSR Committee

2013-2017

- 41 CSR medium-term targets reviewed by CSR Committee

2017

- Group unified priority risk initiatives reviewed by CSR Committee

Standards and Guidelines for Reference and Analysis Tools

- Japan Auto Parts Industries Association (JAPIA) guidelines & checklist
- Japan Electronics and Information Technology Industries Association (JEITA) guidelines & checklist
- Japan Business Federation "Charter of Corporate Behavior Action Plan"
- GRI
- ISO 26000
- ISO 31000 risk analysis sheets, risk maps, risk management tables

Mid-term CSR targets

Field of Activities		Mid-term Targets (by fiscal 2020)	Department in Charge
Management	Company-wide CSR Management	Implement PDCA cycle to promote CSR on a global basis	Risk Management Dept.
		Promote CSR awareness-raising activities on a global basis	
	Compliance		Compliance Committee
	Company-wide Promotion System	Construct a global promotion system	
		Continue education on helpline content	
		Continue compliance awareness and knowledge training	
		Continue monitoring of compliance awareness and knowledge and corporate culture change	
	Security Control	Deploy educational tools to NGK SPARK PLUG and group companies in Japan and monitor implementation status and effectiveness	Confidentiality Management Committee
		Continuously improve security control, including group companies, and establish system for surveillance of implementation status	
	Export Control	Establish a system for surveillance of implementation status of appropriate export controls, including group companies	Export Control Committee
	Information Security	Continuously reduce security risk of group companies through deployment of Group Information Security Regulations	Information Systems Dept.
	Respect for and Protection of Intellectual Property Rights	Implement patent review activities for mainstay products prior to design review meeting, including group companies	Intellectual Property Dept.
		Establish new methods to deal with increasingly sophisticated counterfeiters, particularly in emerging countries	
		Have at least 15% of submitted patents be differentiation patents utilizing a patent portfolio that adds rivals' information	
		Involve trademark aspects in strengthening our brand organization	
		Enhance intellectual property education, including group companies	

Field of Activities		Mid-term Targets (by fiscal 2020)	Department in Charge
Management	Risk Management		
	BCP/BCM	Expand business continuity management system to group companies in Japan	BCM Working Group
		Construct a management system that can respond to not only earthquakes but also other disasters	
		Construct a procurement BCP framework and expand and operate it at group companies	Procurement Div.
		IT-BCP countermeasures for server infrastructure (cloud utilization)	Information Systems Dept.
	Company-wide Risk Management	Build company-wide risk management suited to NGK SPARK PLUG	Risk Management Working Group
With Our Customers	Safety and Quality	Expand quality assurance to all group companies with a focus on goods for all customers	Quality Committee, Corporate Quality Management Div.
		Expand quality management to all group companies aimed at delivering value to all customers	
With Our Shareholders and Investors	Information Disclosure	Disseminate information that leads to increased shareholder trust	Public Relations Dept.
		Disseminate information in an easy-to-understand and approachable manner on a global level	Risk Management Dept.
		Construct a framework for an IR strategy aimed at institutional investors	Accounting & Finance Dept.
		Disseminate information that captures stakeholders' expectations and the changes in social trends	Risk Management Dept.
With Our Employees	Employment and Human Rights	Implement fair evaluations that correspond to clear expectations	Strategic Human Resources Dept.
		Establish educational programs that target the leaders of each group company	Strategic Human Resources Dept.
		Employ diverse human resources strategically	Strategic Human Resources Dept.
		Achieve personnel and human resources functions that contribute to the promotion of management strategy	Strategic Human Resources Dept.
		Further encourage the promotion of active participation by women	Strategic Human Resources Dept.

		Zero workers leaving their jobs in order to provide nursing care	Strategic Human Resources Dept.
		Achieve the mandatory number for employment of people with disabilities	Strategic Human Resources Dept.
		Promote active participation by seniors	Strategic Human Resources Dept.
	Occupational Safety and Health	Raise productivity by decreasing the rate of onset of mental illness	Personnel and Labor Relations Dept.
		Develop systems that make it difficult for accidents to occur aimed at developing a global safety culture	Safety and Health Committee /Environment & Safety Management Dept.
With Our Suppliers	CSR Procurement	Improve the framework for evaluation aimed at global optimum procurement and deploy and operate at group companies	Procurement Div.
		Reduce risk in the supply chain by thoroughly establishing CSR procurement	Procurement Div.
		Promote education and enlightenment aimed at reducing risk utilizing supplier seminars, etc.	Risk Management Dept.
With Local Communities and International Society	Social Contribution	Continually enhance the social status of the NGK SPARK PLUG Group through social contribution activities	Public Relations Dept.
For Environmental Protection	Environment	Promote environmental activities aimed at achieving global Eco Vision	Environmental Committee. Environment & Safety Management Dept.

Fiscal Year CSR Target and Results

We carry out CSR promotion activities according to the medium-term targets and fiscal year targets.

Our CSR Committee checked the progress of targets for fiscal 2017 and formulated new targets for fiscal 2018 as part of achieving our medium-term targets. When formulating policy, each expert committee and division first confirmed the expectations and demands of all our stakeholders. They then drafted medium-term targets in relation to SDGs. Finally, the CSR Committee approved them.

CSR targets and Results
(Please refer to page 104-107)



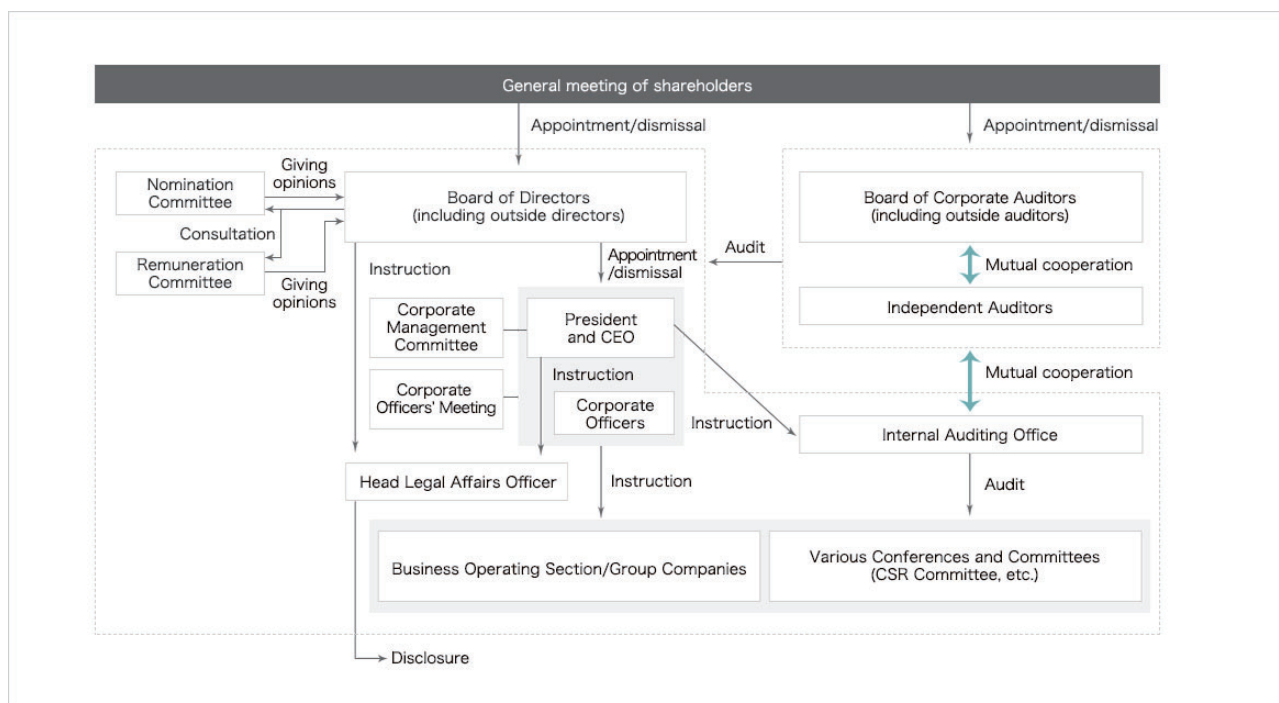
Corporate Governance

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 keep on carrying out efficient and sound business operations to pursue corporate philosophy by enhancing corporate governance for fulfilling our responsibilities to stakeholders.

Corporate Governance System

The following framework has been built for decision-making, supervising, and execution of management.



Corporate Governance System

Board of Directors and Directors

Board of Directors is composed of 10 directors, 3 of which 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 managerial key issues, and also for supervision of business execution status in response to reports from the directors. Additionally, Management Meetings composed of Directors are held regularly once a month for discussion and pre-grasping about business challenges to be addressed, and any possible risk that involves our company for enhancing the system that can be flexibly adaptable to change in the managerial environment.

We have introduced Corporate Officer framework on April 2012 for the purpose of prompt execution of duties based on various policies determined by Board of Directors and clarifying resultant responsibilities. Board of Directors has nominated 23 corporate officers (7 of them work as directors) who share information, and exchange opinions on the status report concerning execution of duties in a cross-sectional way in Corporate Officers' Meeting to be held once a month. Each term of Board of Directors and Corporate Officers' Meeting is one year.

Board of Auditors and Auditors

Board of Auditors is composed of 4 auditors, 2 of which are outside auditors.

Two full-time auditors serve to audit execution of duties by the directors through regular opinion exchange with the representative director, and auditing of major offices and subsidiaries.

Meanwhile, the outside auditors serve to audit execution of duties by the directors through attendance of Board of Directors. The auditors will attend various meetings and committee meetings whenever necessary.

Independency of Outside Director/Outside Auditor

The outside directors perform supervision while taking the position independent from business execution by stating opinions from broad point of view in important meetings such as Board of Directors. The outside auditors perform audits on the background of technical knowledge while adopting multilateral viewpoints by stating opinions in important meetings such as Board of Directors. The outside directors and outside auditors are designated as independent officers. They may be nominated in accordance with both the criteria prescribed by stock exchange, and our own criteria in order to ensure that the candidate has no special relationship with management and major shareholders of our company, and no conflict of interest against the general stockholders.

Internal Audit

We have established “Internal Auditing Office” as an independent department. Through audits of NGK SPARK PLUG CO., LTD., and its group companies, the Internal Auditing Office reports the audit results to management and makes proposals to correct problems and improve business operations as necessary. Departments that receive a proposal for improvement formulate and implement improvement plans and the Internal Auditing Office monitor the implementation status. The Internal Auditing Office assesses the effectiveness of internal control over financial reporting in accordance with the internal control report system pursuant to the Financial Instruments and Exchange Act so as to secure the reliability of financial reporting, thereby working to maintain and improve internal control.

Internal Auditing Office will ensure effective and efficient audit through exchanging views on each of the audit plans and results with corporate auditors or independent external auditors or both, from time to time on a regular or necessary.

Remuneration for Director and Auditor

We have established optional nomination/remuneration committee on April 2017 for rationality and transparency of nomination/determination of remuneration for the director. Since June 2017, targeting the directors and the corporate officers, we have introduced the share-based remuneration system of performance-based type as the executive remuneration system with high transparency and objectivity based on business performance for the purpose of raising awareness of contribution to improvement of business results on the medium- to long-term basis, and enhancement of the corporate value. This system is intended to evaluate the attainment level of business operations in terms of consolidated sales, consolidated operating profit, and ROIC as indexes for four business years from fiscal 2017 to 2020 within our medium-term management plan period.

Remuneration and bonus paid to directors and auditors in fiscal 2017

	Remuneration (except bonus)		Bonus	
	Number	Amount (million yen)	Number	Amount (million yen)
Director	8	592	8	146
Outside director	3	42	—	—
Auditor	3	50	—	—
Outside auditor	3	28	—	—
Total	17	712	8	146

*Including remuneration paid to one director and two auditors resigned at the conclusion of 117th annual shareholders meeting (held on June 29, 2017).

*Maximum amounts of remuneration paid to the directors were set by a resolution made at the 117th annual shareholders meeting (held on June 29, 2017) as follows.

Total amount of remuneration (except bonus) monthly within 60 million yen

Total amount of bonus annually within 180 million yen

*Maximum amounts of remuneration paid to the auditors were set by a resolution made at the 106th annual shareholders meeting (held on June 29, 2006) as follows.

Total amount of remuneration (except bonus) monthly within 10 million yen

Total amount of bonus annually within 10 million yen

Compliance

Compliance Policy

With recognition that our company is a member of society, we enhance corporate ethics and understand the spirit and meaning of laws, company regulations, international rules, and social norms in order to appropriately meet social demand and become a company trusted by the international community.

Action Guidelines

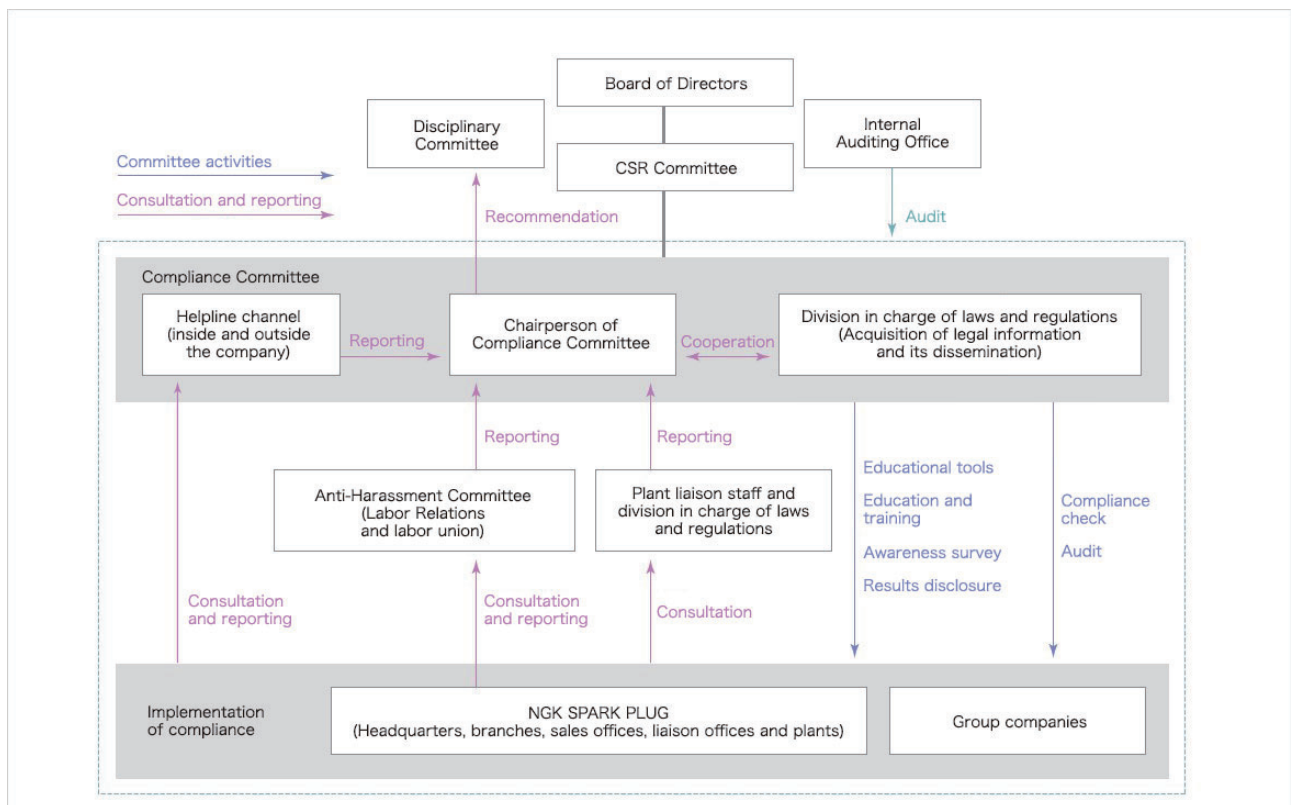
- We not only comply with laws and regulations, but also act in good faith with common sense and responsibility as a member of society.
- We regularly educate and raise the awareness of all our employees to impart a high level of ethics and correct knowledge, with which they can act voluntarily to prevent a violation.
- Should a violation occur, we will promptly investigate the causes and take remedial actions. We will strive to take appropriate countermeasures to prevent recurrence and fulfill our accountability.

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 System

A Compliance Committee made up of representatives of departments in charge of overseeing compliance with laws and ordinances and each division, headed by the Representative Director, holds meetings every three months, carrying out inspections and correcting serious problems.



Compliance Promotion System

Promoting Compliance Education

To raise employees' awareness of compliance, we continue education and edification using the Compliance Guidebook, which collects rules concerning the company and society, and the Compliance Newsletter, which gathers examples of incidents that happen nearby. In addition to the level-specific training we have used in the past, we also hold training on the themes of competition law, export control, and business law.



Compliance Guidebook

Compliance Survey

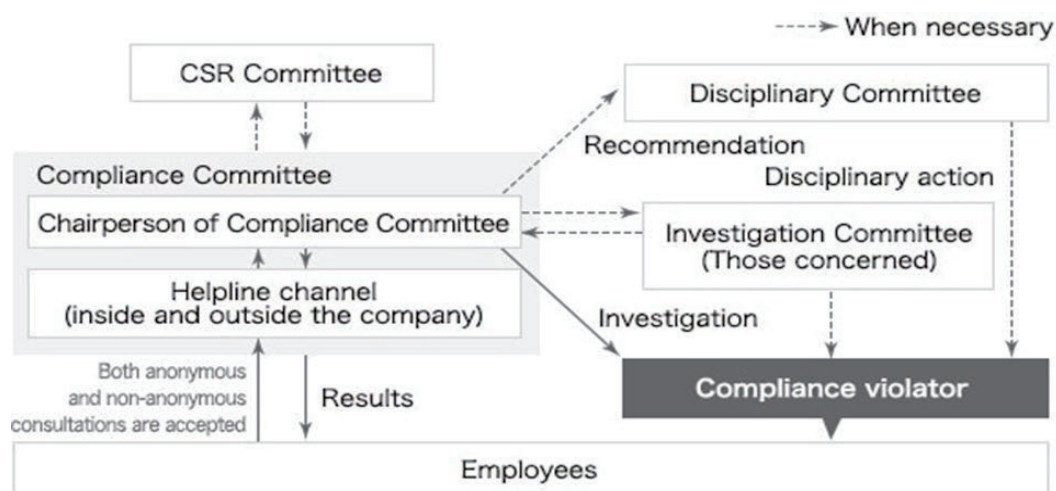
We conduct a compliance survey every year. This identifies employees' level of understanding about regulations and systems, the culture of the various workplaces, and compliance risks, and we work for individual improvements by providing feedback on the results to each workplace.

Corporate Ethics Helpline

We have opened the “Corporate Ethics Helpline” as an in-house reporting system that encourages employees to consult regarding compliance. We have worked to increase convenience by establishing channels not only inside the company but also with an external expert private company, enabling consultation and reporting outside of business hours, on holidays etc. Anonymous consultations are also accepted.

Regarding consultations and reports received, facts are investigated with discretion, so the reporting employee is not identified and does not feel uncomfortable, and if problems are confirmed, they are dealt with promptly.

We have received 65 cases of consultations/reports in fiscal 2017, including those from employees for our group companies. The consultations and reports mainly involved with issues such as labor and in-house rules. We immediately took remedial actions upon identification of problems of accepted cases. This system will be continuously made known to every employee through opportunities, for example, by introduction in trainings, display of posters, and distribution of portable cards.



Flow after report is received via the Helpline

Initiatives to Prevent Corruption

The NGK SPARK PLUG Group works to prevent corruption, stating in our corporate code of conduct “we shall promote fair, transparent, free competition and sound trade. We shall also ensure that our relationships and contacts with government agencies and political bodies are of a sound and proper nature.”

In the Compliance Guidebook we issued in 2012, we set rules concerning the prevention of corruption, including the prohibition of involvement in political contributions or bribery, and subsequently educated employees about these. In 2013, we educated employees about our Conduct Guidelines Concerning the Giving and Receiving of Gifts and Entertainment and are raising awareness to eliminate any misconduct. Further, in 2016 we signed the United Nations Global Compact, openly reaffirming our commitment to undertaking the prevention of corruption. While addressing the prevention of corruption in accordance with these and other guidelines, we respond to any incident of violation primarily through our Compliance Committee. We also accept information provided through the Corporate Ethics Helpline.

Our overseas group companies are also taking action to prevent corruption, especially preventing bribery towards civil servants, and conduct education for employees along with surveys of local laws. Through our CSR Procurement Guidelines, we further require that suppliers refrain from acts of bribery. In fiscal 2017, there were zero related violations committed by our Group.

Initiatives Concerning Competition Law (the Anti-Monopoly Act)

Responding with sincerity to violations of competition law (the Anti-Monopoly Act) uncovered in fiscal 2014, the NGK SPARK PLUG Group has established a system to promote compliance with competition law and ensures legal compliance both inside and outside of the company. In addition, we have formulated an Anti-Monopoly Act Compliance Manual to educate employees, including holding seminars on the topic. Furthermore, we have introduced an in-house e-mail inspection system for monitoring and prevention of recurring violations of the Competition Law.

The domestic competition law and compliance measures team visits overseas group companies to conduct audits on compliance systems and their operational status, and to confirm that rules are thoroughly promulgated and enforced. In addition, we conduct checks of the readiness status of internal reporting systems, as a means for quickly discovering the possibility of violations. From fiscal 2015 to fiscal 2016, we conducted on-site audits at almost all overseas group companies. We will continue to conduct education and audits both in Japan and overseas and will enforce the strict observance of competition law.

Policies Regarding Taxes

The NGK SPARK PLUG Group has set a compliance policy by which we recognize that we are a member of society, and, with understanding of the spirit and the purpose of laws and ordinances, respond appropriately to the demands of society and aim to become a company trusted by the international community. We also undertake the payment of taxes on the basis of this policy and in accordance with the following principles.

1. The Group will fulfill its social responsibilities by observing laws on corporate taxation and other tax laws in every country, as well as international taxation standards including the OECD Transfer Pricing Guidelines and the Action Plan on Base Erosion and Profit Shifting.
2. In order to ensure compliance with the above laws and ordinances, our Group will work toward improving our knowledge of, and correct understanding of taxation, and to enhance reliability and transparency with an attitude of sincerity toward tax authorities.
3. The Group will properly manage taxation risks by working toward appropriate declaration and payment of taxes in each country, thereby enhancing shareholder value.

Export Controls

Basic Philosophy

Aiming at international peace and security, export management (Security export control) has been implemented to protect cargo and technology from being utilized by Organizations with some kind of connection to Regional conflicts or Nuclear development for military purpose. The demand for proper export control has been increasing due to worsening international security. To suitably execute export controls based on the Foreign Exchange and Foreign Trade Control Act, we have drawn up our own Export Management Regulations and established our in-house export control system. Our logistics departments have been working to achieve proper cargo control under the background of solid security management system of export cargoes for terrorism prevention based on various relevant systems. We will continue to carry out business in compliance with all laws and regulations to fulfill our responsibilities as demanded by the international community and the government.

Holding Regular Briefings on Different Themes

Responding to needs of continuous education to appeal the importance of security export controls and cargo security management to all through the company, we are planning to hold regular briefings on various themes for related divisions in the company.

Themes and Results in fiscal 2017

Themes	Number of times	participants
1. Foreign exchange laws and security export controls (Includes implementation of classification)	14	229
2. Customs law, Authorized Exporters' program (AEO system)	13	219
3. Air cargo security management (KS/RA system)	12	170

Themes in fiscal 2018

1. Foreign exchange laws and security trade controls
2. Customs law, Authorized Exporter's program (AEO system)
3. Air cargo security management (Known Shipper / Regulated Agent system)

Security Control / Information Security

Information Security Policy

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

Action Guidelines

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

Basic Philosophy

We have established the Group Information Security Regulations and Confidentiality Management Regulations, striving for appropriate protection and management of confidential information, including the information of the NGK SPARK PLUG Group, personal information of customers and suppliers. Even in the use of electronic information equipment such as wireless LAN and mobile terminals, we will conduct information security management with due consideration in compliance with relevant laws and regulations.

Our privacy policy is available on our website

Conducting Continuous Security Measures

We are continuously handling the risk of threats to corporations and organizations dealing with information securities. Furthermore, with the increase of the damages caused by recent cyber security attacks, we are establishing a professional team, including experts outside the company, CSIRIT (Computer Security Incident Response Team) in order to respond to the information security incident.

Carrying Out Periodic Inspections Related to Confidentiality

Management

To ensure that the confidentiality management rules we established do not become rules in name only, the Confidentiality Management Committee performs annual company-wide inspections of the status of confidentiality management. As measures for the inspection, we have adopted a method of carrying out mutual interdivisional inspections in addition to the self-checks carried out in the past to strengthen the checking function.

Furthermore, we have not only established rules for confidential information handled in-house, but also rules to prevent leaks of confidential information taken outside the company, including procedures for the use of mobile PCs and cloud service, and we carry out checks on the operational status of these rules.

Intellectual Property

Basic Philosophy

To protect its existing and newly developed products, NGK SPARK PLUG CO., LTD. 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 or 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 (Manufacturing) Company.”

Promoting Measures to Stamp Out Counterfeit Goods

As for NGK SPARK PLUG CO., LTD.'s measures against counterfeit goods, our various overseas group companies and local law firms have been proceeding with activities through tie-ups. Until now, we have been working primarily in China, but we will be strengthening activities in the ASEAN and India, where economic growth continues.

The counterfeit goods that threaten the safety of customers exhibit the trend toward further trickiness and smaller lot through the Internet trading. We have been continuously engaging in activities for uncovering and stamping out the counterfeit goods in close cooperation with the police, the customs, and relevant administrative agencies.



Seized counterfeit goods

Risk Management

Risk Management Policy

We will identify the risks that could have serious impact on our business activities based on the comprehensive understanding of the risks related to our Group and take necessary measures to prevent the occurrence and recurrence so that the risks are reduced to an acceptable level. Even if such a risk should occur, we will also strive to restore and continue smooth business operations, thereby maintaining trust from our stakeholders.

Action Guidelines

- We conduct our activities with top priority on the protection of human life.
- We strive to prevent factors that could affect business continuity.
- We minimize impact on related parties.
- We strive for rapid restoration of business operations and stable supply of products and services.
- We take measures to prevent the recurrence of risks.

Basic Philosophy

We are promoting construction and operation of the companywide risk management system as the strategy coping with the complex and diversified business environment and risk. Based on the following basic ideas, we will continuously make our efforts to affect the system integrated with groups inside and outside Japan.

1. Sharing of idea/procedure of raising awareness of risk, evaluation, and formulation of measures;
2. Construction and operation of the management system adapted to individual group companies;
3. Skill-up of risk assessment and measures

Promotion system

Appointing the President of NGK SPARK PLUG CO., LTD to “Chief Administrator” of risk management, and appointing the Director of Risk Management Department to “Promotion Manager”, the CSR Committee including all Directors as members is expected to evaluate operation/results of group-wide activities based on the following items for review on the management in the next term.

1. Classify the risk into hierarchies including management level, Department/Division level, and working level for clarifying the respective coverages of risk management. For the group management risk level, “Unified priority risk measure for the whole groups” is selected for evaluation on the countermeasure status.
2. Evaluate each status of risk management system construction/operation in the respective group companies.
3. Instruct correction of descriptions as described in the items 1 and 2.

Classified risk

Human rights and labor practice	Harassment
	Discrimination
	Long hours of work
	Labor dispute, Strike, Demonstration
Safety and Health	Occupational accidents
	Traffic accident
	Mental health
Environment	Environmental pollution
	Violation of laws
Information security and Confidential information management	Information system failure
	Cyber attack
	Leakage of confidential information and personal information

Fair trade and Ethics Product	Infringement of intellectual property rights
	Export management
	Accounting problems
	Procurement
	Defective product
Accident	Product liability
	Natural disaster
Fair trade and Ethics	Infectious disease
	Fire and explosion
	Infringement of

Establishment and implementation of company-wide risk

management

<Group unified priority risk initiative handling>

In Fiscal 2017, we have strengthened the work to promote BCM (Business continuity management) and to prevent corruption and made it a top priority.

<Expanding to group companies>

In Fiscal 2017, in regard to company-wide risk management, we have organized the formulation of a risk management system and formulated a program which handles important and urgent issues. We have also expanded our formulations of risk management to include group companies.

<Overall review by the CSR Committee>

Our company president reviewed our risk management with the CSR Committee.

BCM Advancement (Business Continuity Management)

Formulation of various BCPs (Business Continuity Plan)

In preparation for possible damage caused by earthquakes, we have been implementing BCM (Business Continuity Management) including taking steps to mitigate the effects of natural disasters and to ensure production can resume as soon as possible after a disaster. For departments such as business, IT, and procurement which are required to take timely measures against disaster, initial responses and restoration procedures are specified in BCP (Business Continuity Plan), clarifying the time-limit for resuming service to our customers.

<Business Department>

As for production recovery, we set a time limit for recovering our main products and established a system for early recovery by formulating an action plan for the recovery team.

<IT Department>

We are continuously working to minimize the damage to IT systems and improve recovery time when disaster occurs. To minimize damage, we have been transferring the working environment for the internet base and workload system respectively to a highly isolated data center. To improve recovery time, we will be utilizing cloud services for backups so that we can recover and restart systems in an undamaged environment. By implementing more effective, practical and regular education and training, we are taking measures to better respond when disaster strikes.

<Procurement Department>

We have promoted countermeasures that include multiple purchasing for key products including materials and parts. A diverse range of materials and parts is required for manufacturing NGK SPARK PLUG CO., LTD.'s products. Therefore, we are trying to secure systems that respond to the BCP through sharing our objectives with each supplier and making efforts across the entire supply chain.

Making preparations for large-scale earthquakes

There have been concerns over large-scale earthquakes in the Chubu region and the various possible damages that are expected. The “Earthquake BCP Guideline” specifies the initial measures in response to earthquakes and business continuity actions. The initial measures cover employee actions like evacuation and confirmation of employees’ safety, provision of emergency response headquarters, an in-house fire brigade and stockpile management. These initial measures will be rehearsed through emergency drills held by the respective plants, business offices of our company and group companies in Japan on the same day in November every year. Business continuity actions cover setting of target times for recovery of important business operations, drafting recovery plans, organization of teams for recovery work, and exercise of BCP and we conduct BCP drills in December every year for improving the effectiveness of business continuity plans. Also, considering the concern over pandemics such as new strains of influenza, we created BCP guidelines for new strains of influenza, etc. to prevent second-hand infections and formulated business continuity plans.



Collecting disaster information drill
(Companywide disaster prevention drill)



Transportation drill
(Companywide disaster prevention drill)



Power generator operation drill
(BCP drill)

Quality Policy and Implementation Structure

Corporate Quality Policy

We are committed to "Customer focus", "Involvement of all members", "Continuous Improvement", to provide "Quality Products" to the society, and create new value.

Action Guidelines

- We strive to take a customer-oriented approach to provide quality products and services, aiming to ensure greater customer satisfaction in all our business activities.
- We are engaged in quality improvement activities through the companywide cooperation and encourage our employees to achieve higher goals by making the best use of their individual abilities and creativity and uniting their efforts to address problems and challenging issues.
- We strive to continue improving our processes, systems, products, and services, aiming to respond to ever changing social/market environments and the diverse expectations and needs of customers.

Basic Philosophy

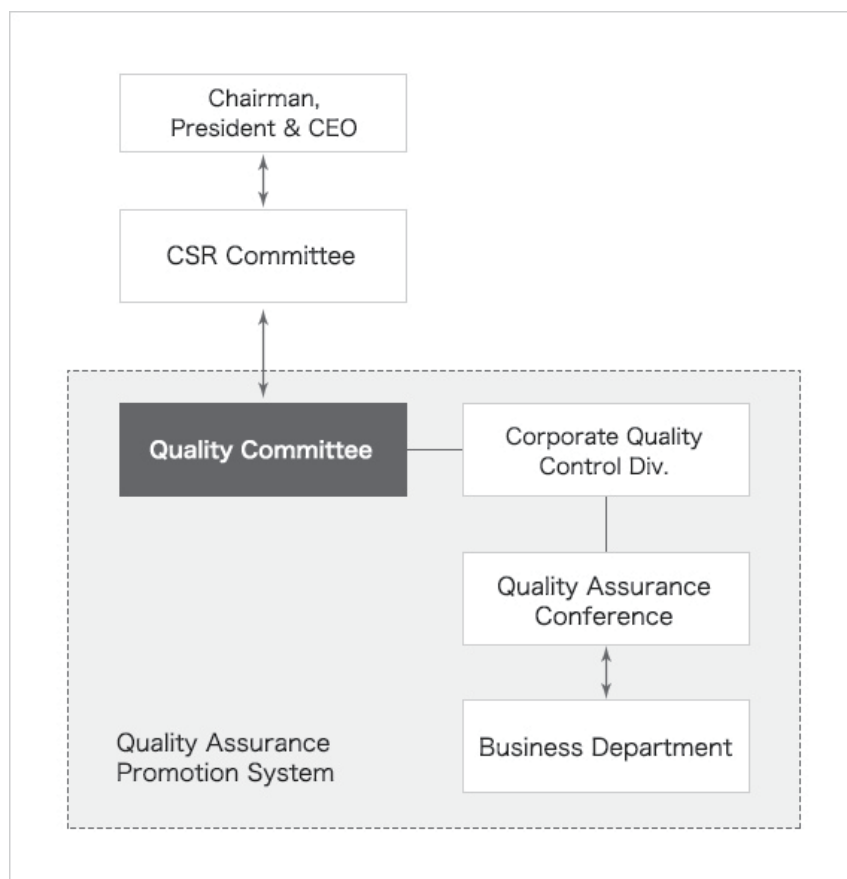
NGK SPARK PLUG CO., LTD. regards all the value, expectations, and evaluations provided to customers through products and services, and all the people, goods, processes, and arrangements involved in producing them as "quality."

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.

Quality Management System

In order to meet the demands of our customers and various industries which handle our products, NGK SPARK PLUG CO., LTD. are strengthening quality assurance operations for providing new values to our customers. Also, we strive to operate good quality management systems by gaining outside certifications which are required in various business areas as well as international regulations such as ISO9001.

The quality assurance committee, as a part of corporate governance system, formulates and decides policies and instructions to optimize our various functions from the whole company's point of view. Furthermore, the Quality Assurance Conference has a quality exhibition room inside the company to share issues and findings regarding quality problems outside and inside the company. By exhibiting panels of all past issues, we educate ourselves, avoid forgetting them and show our commitment towards quality held by our founder and current management. We constantly strive for better quality and to provide better services.



Quality Management Promotion System (FY2017)

Initiatives to Improve Quality

Basic Philosophy

NGK SPARK PLUG CO., LTD. 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 CO., LTD.'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 CO., LTD. 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 CO., LTD. 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 CO., LTD. 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 CO., LTD. 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 CO., LTD. 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 grade-specific education system.

Running “Quality Activity Events” Year Round

We run quality management events year-round, not only in Japan’s Quality Month which is held every November. Our quality expos are held at all the sites of group companies in Japan and are visited by more than 6,000 employees each year. We established the expos as an opportunity to share our approach to quality as well as the diverse quality-related initiatives in workplaces.



Quality exhibition

We also promote activities to maintain and enhance quality while engaging all employees in a range of events such as raising awareness about quality through collection of quality slogans and attendance of lectures on quality, expansion of QC circle activities through presentation and attendance at lectures including our suppliers at our QC circle workshops, and promotion of problem-solving through inspections by local senior management including overseas business sites.



NGK SPARK PLUG Group
QC circle workshops

SDCA Activity

Standardizing our work and operations plays an important role in supporting TQM (quality management). As a manufacturer, we are promoting the manufacturing worksite SDCA (Standardize, Do, Check & Act) activity to stably and reliably conduct daily management at our manufacturing worksites. We are working to improve quality of our manufacturing while being susceptible to any abnormal state in the worksites and maintaining the worksite without muri, muda and mura (unreasonableness, waste and inconsistency) as a daily routine through good communication.

Quality Training Raising the Quality of Our Manufacturing

We are working to develop our human resources as developing things is developing people. We have established fulfilled 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 support activities at sites. We expect that training participants will improve their skills by implementing their techniques through familiar themes in addition to spreading the awareness to the employees around them. We also offer quality training and practical support for problem solving for suppliers so that they provide us with consistently high-quality parts and materials based on continuous quality improvement



Quality Training

QC Circle Activities (Small Group Improvement Activities)

We are implementing QC Circle Activities aimed at advancement of personnel training and workplace capacity by continually solving problems and issues we face in daily work. We call this activity "NQC Activities." (N denotes an initial letter of Nittoku).

Presentation and Sharing of Results of NQC Activities

NQC activities are working to spread and hold improvement activities in domestic offices as well as overseas offices. Since fiscal year 2015, we have invited the best overseas teams to jointly hold a presentation for the best improvement practices at our annual presentations of domestic NQC activities. In 2017, we invited every group from the offices in Siam and other offices in Thailand to improve our group activities through giving direct instruction and supporting their presentation practice. Furthermore, office groups in Thailand won 2nd place for their presentation regarding office improvement at New Born Class in Thailand Quality Prize 2018, which is the largest QC group competition in Thailand. People in all industries participate in Thailand Quality Prize from all over Thailand.



Office groups in Thailand

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 support our group companies in the way adapted to individual tasks by making importance of measurement known to the entire group.

Expanding measurement management system into NGK SPARK PLUG CO., LTD.

When new products are put to market, we must maintain the same level of the quality of existing products. The same thing can be said when we introduce new equipment internally.

In order to provide value new markets, it's necessary to nurture personnel assets who are knowledgeable about accurate measurement systems and crisis management, which is why we are in the process of selecting a precise and verifiable measurement system.

Development of Measurement Management System for Group Companies in Japan

We have established the unified criterion for the measurement management system so that such system is implemented at higher operation level. We believe that the unified criterion will lead us to enhancement of quality assurance system. We are performing audits of measurement management systems and confirmation of manufacturing worksite measurement at each company and have been working to unify standards and enhance the quality of frameworks and management.

We will offer the support to voluntary level-up through key person development for the jobsite confirmation and human resource development conducted in each company

Support of Overseas Group Companies in regard to Measurement

We visit the plants of overseas group companies on a regular basis to support the quality assurance system from the viewpoints of measurement and contribute to the improvement of accuracy and consistency.

<Calibration Certification>

We educate the local people who conduct inspection, calibration and certify them according to the skills they acquire. In order to improve measurement skills and further motivate measurers, we plan to hold a measurement skill competition among factories to upgrade the whole NGK group.

<Measurement management system audit>

In order to check if the right measurement machines are in the right condition, we conduct a measurement management system audit. The in-depth confirmation is intended to further improve measurement management levels directly linked to manufacturing. We will work on localization so that each company is able to perform skill certifications, training, and process confirmations on their own.

Communication to Customers

Basic Philosophy

For the reliable supply of our products and services to our customers all over the world while satisfying their demands and requests, we have been making efforts to perform high-level communication with customers in various ways. We are offering correct and appropriate information on the website or in exhibition always from the customer-oriented point of view.

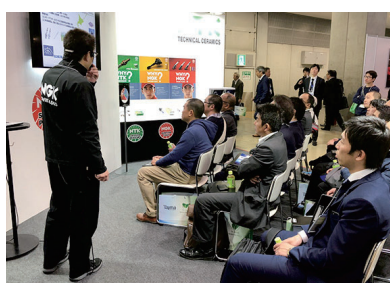
Providing Services Demanded by Customers from a Customer-oriented Perspective

We also provide high quality services based on the appropriate technology and knowledge as well as long experience in the automobile aftermarket and promote diverse activities responding to requests of customers from a customer-oriented perspective around the globe. We put efforts into technical knowledge training for marketing staff in Japan and overseas as well as the training of overseas technical marketing staff to enhance the communication with users by holding training sessions for mechanics working on the automobile maintenance site, or students as would-be mechanics, or running an event for arousing interests of end users in the spark plug inspection.

In addition, we promote market research activities as well as feedback by collecting and providing technical information and new car and model information, and work on initiatives to further increase customer satisfaction by responding to customer inquiries, and to our website, and providing diversified services including technical support to cope with complaints.



OJT activities in maintenance shop
(India)



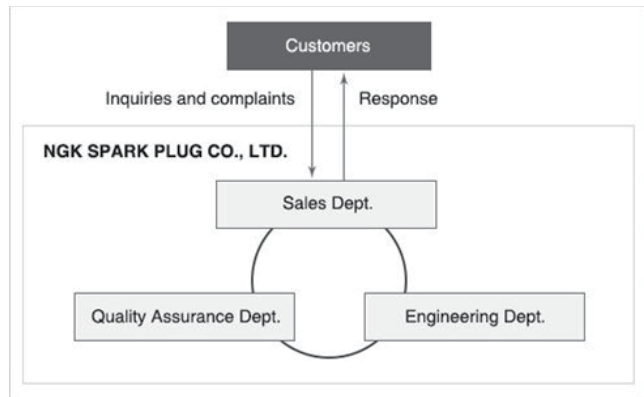
Plug setting experience using VR at
the exhibition. (Japan)



Training session for mechanics
(Japan)

Responding to Inquiries and Complaints

Inquiries and complaints on our products received from customers are first accepted at our sales division. Then the quality assurance division works together with the technical division to quickly respond and take necessary actions to the inquiries and complaints.



Response to Inquiries or
Complaints

Sending Information on Website

“PLUG STUDIO” is a website that disseminates detailed information about our products including NGK spark plugs. Customers can also search for the part number that matches their vehicle and model. The website also features information on motor sports, primarily teams supported by NGK SPARK PLUG CO., LTD. as well as upcoming exhibitions and events.

We have set up an official Facebook account for NGK SPARK PLUG CO., LTD. to further inform more customers of the NGK spark plug brand.

Communication through Exhibitions and Events

We make sure to have PR booths at exhibits and motor sports events.

These provide valuable opportunities that allow us to meet with customers and explain our products and technologies directly, and we also use these opportunities to identify constantly evolving needs.

PR booth exhibits at racing venues

In fiscal 2017, we exhibited a total of six times in PR booths at racing venues while motorcycle and automotive racing events were being held. In addition to introducing our products to motor sport fans, we held stage events many customers participated in. On April in that year, we supported SUZUKA 2&4 race, the greatest form of motorcycle and automotive racing events held in Japan as the title sponsor. We succeeded in making close link between the NGK spark plug brand and the motor sports known to a wide range of customers



2017 NGK SPARK PLUGS SUZUKA
2 & 4 RACE

Participation in Automotive Engineering Exposition 2017

We participated in “Automotive Engineering Exposition 2017” in Yokohama and Nagoya, as the exhibition specializing in automotive technologies. We introduced our key products including spark plug, glow plug, and various types of sensors all contributing to improved fuel efficiency and emission reduction. We also introduced our latest technologies to visitors by demonstrating the “compact multi-gas measurement device (NCEM®)” capable of measuring exhaust gas of the traveling vehicle, and the “hydrogen leakage detection sensor” as the requisite component for the fuel-cell vehicle.



AUTOMOTIVE ENGINEERING
EXPOSITION 2017

Responding Product Defects

We make it a rule that any product defect we have detected and found to possibly cause harm to customers be immediately announced to the public through our websites, newspapers, trade journals and other media as appropriate and that we simultaneously implement countermeasures against such defects to protect all users.

With Our Shareholders and Investors

Information Disclosure Policy

Aiming to become an enterprise capable of receiving great support and popularity from people around the world, we strive to conduct transparent business operations and fair information disclosure.

Action Guidelines

- We disclose any corporate information required to be disclosed by the Financial Instruments and Exchange Act and other laws and regulations, in an accurate and timely manner.
- We actively disclose our corporate information, which is not subject to laws and regulations however deemed to be important for stakeholders, through our daily actions, such as issuance of press releases and updates of our website.
- We focus on enhancing communication with our shareholders, investors, and other stakeholders to further promote mutual understanding with them.

Basic Philosophy

At NGK SPARK PLUG CO., LTD. we are well aware that promoting transparent and fair information disclosure is indispensable to having all our stakeholders better understand and evaluate our business operations. To achieve this goal, in addition to meeting the legal standards of information disclosure, we also strive to strengthen information disclosure through various media and promptly release information on our website, with the aim of ensuring stakeholders' greater trust in our business operations.

Facilitation of exercise of rights in shareholders' meeting

We send out the notice of convocation for our Ordinary General Shareholders' Meeting even earlier than the legal deadline so that shareholders can give adequate consideration to the reports and resolutions. Additionally, we try to carry out earlier disclosure by releasing the information on the company website before sending out of the notice. We also translate part of the notice of convocation into English for overseas shareholders and post it on the company website in parallel with the Japanese version. Furthermore, we are striving to create a suitable environment for the exercise of shareholders' rights, including making it possible to exercise rights from a PC or a mobile phone in addition to the exercise of rights in writing.



The 117th general meeting of shareholders (June 29, 2017)

Hosting a Technology Orientation

We host a technology orientation for the investors and analysts to deeper understand our technologies. We also invited them to see the actual manufacturing process. We will continue to work on to meet our shareholders and investors' needs, focusing on "active communication" and "fair information disclosure."



Technology Orientation

Engaging in Activities to Make Shareholders and Investors

Familiar with NGK SPARK PLUG CO., LTD.

We hold company briefing sessions for shareholders and investors. In fiscal 2017, in order to make our company highly recognized nationwide, we visited areas all over Japan to try to hear "real opinions". We will continue to value dialogue with all investors and our shareholders.

Returning Profits to Shareholders

Returning profits to our shareholders is one of the most important policies for our management and have consistent and stable payment of dividends as a basic policy. We also consider the return of profits in line with earnings as important. Therefore, with the total return ratio on our mind, we plan to continue the payment of interim and year-end dividends with a target consolidated payout ratio of at least 30%, giving comprehensive consideration to a stable dividend level, which is our basic policy, and internal reserves to allocate capital expenditure and investment for the R&D required for our future growth, and business expansion and streamlining. Based on these policies, the dividend per share during fiscal 2017 was 60 yen.

Furthermore, we also recognize that repurchase of own shares is effective for increasing capital efficiency, and we hope to carry out such acquisitions as necessary. In fiscal 2017, we repurchased about 1.9 million of our shares (Total sum of repurchase: about 5 billion yen)

With Our Suppliers

Procurement Policy

We aim to realize globally optimal procurement based on our quality products principle. To this end, we focus on strengthening cooperation with suppliers and promoting our CSR efforts throughout our supply chain system, while at the same time striving to carry out proper purchasing transactions when procuring materials and parts, based on the following guidelines.

Action Guidelines

- We conduct rational transactions based on fair, transparent, and open competition.
- We select suppliers based on comprehensive assessment of product quality, technology, prices, deliveries, and efforts to continuously make improvements.
- We will enhance mutual trust with our suppliers, which are good partners for us, and strive to realize mutual development.
- Aiming to become a good corporate citizen, we engage in business operations that comply with applicable national and international laws and regulations.
- Aiming to procure more eco-friendly products, we strive to promote our green supplier system.

Basic Philosophy

It is indispensable to establish healthy partnerships with our suppliers to procure better quality raw materials and parts in a more timely and stable manner. We will carry out activities for mutual growth while competing with one another with a rather tense atmosphere through our supply chain system for enhancement of the mutual trust.

Promoting CSR-Oriented Procurement

We promote the following activities for suppliers and our employees respectively, for the purpose of ensuring fair transactions with suppliers and the establishment of mutually beneficial sound partnership with suppliers.

For suppliers

- We explain our “CSR procurement guidelines” on our websites.
- We implement our CSR program with supplier’s self-checklist and provide feedback on the overall results.
- We explain our “Green Procurement Guidelines” on our websites.
- We visit the premises of suppliers for practical onsite activities, such as 5S* kaizen (improvement) and Total Productive Maintenance (TPM) and hold various seminars.
- We actively communicate with our suppliers to explain our corporate policy through corporate policy conferences, etc.

*5S denotes five primary phases of workplace organization technique each starting from “S”, including “Seiri (Sort)”, “Seiton (Set in order)”, “Seisou (Shine)”, “Seiketsu (Standardize)”, “Shitsuke (Sustain)”. The workplace where 5S is thoroughly practiced may be regarded as being of high operation management level.

For our employees

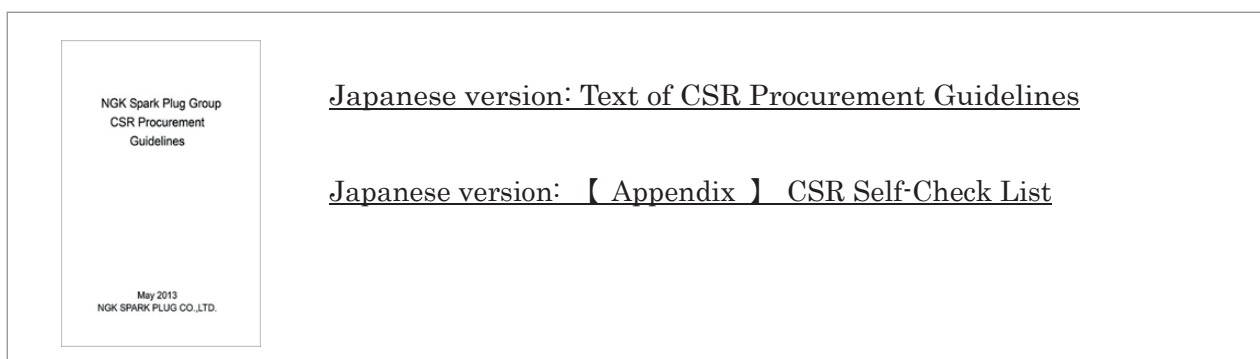
- We hold seminars for our procurement personnel to ensure their compliance with the Subcontract Act.

CSR Procurement Guidelines

In order for the NGK SPARK PLUG Group to put CSR into practice, it is necessary that our business partners understand and cooperate with us on a daily basis. Toward that end, in the procurement policy that we established in April 2012, we indicated that we would promote our CSR efforts throughout the supply chain. In May 2013, we established the NGK SPARK PLUG Group CSR Procurement Guidelines and subsequently extended it to our business partners.

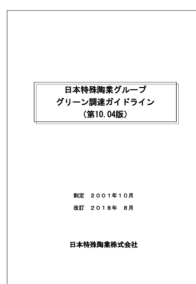
The “CSR Procurement Guidelines” describe the content of our initiatives in seven areas: human rights and labor; occupational health and safety; environment; fair trading; product quality and safety; information security; and contribution to society. We ask our business partners to understand the purpose of these guidelines and to put them into practice as well as to allow suppliers to develop the guideline.

In the field of the environment, we have established content for overall initiatives such as environmental conservation activities and the effective use of energy resources. With respect to the details of chemical substance management, we have separately established, and request cooperation with, our Green Procurement Guidelines.



Green Procurement Guidelines

These guidelines explain the basic concepts of our green procurement based on our environmental policies. We reviewed the list of related chemical substances in August 2018 and released version 10.04 of the guidelines. We ask our suppliers to study the guidelines and cooperate with our green procurement.



Japanese version: Green Procurement Guidelines

survey sheet

Japanese version: appendix table-1 Survey regarding the presence or absence of "substances of environmental concern"

Japanese version: appendix table-2 Non-use Declarations

Green Suppliers

We certify suppliers that meet our system and material standards prescribed in “Green Procurement Guidelines” as "green suppliers," and give priority to these in purchasing.

In fiscal 2017, we certified 131 suppliers involved in facilities/jigs and tools, building/incidental facilities, and 263 suppliers involved in raw/subsidiary materials, parts, processing and outsourcing.



Implementing Activities to Pull out Potential Capabilities

(Seminars and Practical Onsite Courses) for Suppliers

NGK SPARK PLUG CO., LTD. holds seminars for suppliers on themes that include process improvement, quality control, industrial safety and health, and the environment, as well as practical onsite courses in which we visit the production sites of suppliers to work for improvements. We implement the activities to help with human resource development at our suppliers, enhancing the capabilities of their companies. In fiscal 2017, we held a total of 31 lectures. We aim to work in partnership with our suppliers in the future to enhance their manufacturing capabilities.

Promoting Follow-Up Activities for Regular Supplier

Assessments

Once a year, we conduct regular assessments of targeted suppliers and inform them of the results. We visit suppliers where follow-up is particularly required to consult about difficulties, carry out onsite confirmation, consider together what to improve so as to overcome weaknesses and implement improvement activities. We will continue to further deepen our relationships of trust with suppliers not only through day-to-day purchasing transactions, but also through follow-up and support activities.

Sharing Corporate Policy

We hold a corporate policy conference with our main suppliers, offering them an opportunity to deepen their understanding of the present situation of our company and our goals. At the conference held in May 2017, we introduced our business results, the company's policy and the policies of each department, which are based on the basic policy, procurement policy and initiatives, and asked for further cooperation to enhance quality, reduce costs, and promote CSR initiatives.



Corporate Policy at Supplier Conference

Handling of Conflict Minerals

Our Group promotes procurement activities taking full consideration of social problems, such as human rights and environment. Conflict minerals have been mined in the Democratic Republic of the Congo and its surrounding countries, and it is feared that they are a source of financing for armed factions. We see this conflict minerals issue as a serious social problem for procuring resources and raw materials. We conduct surveys tracing back through the supply chain to find out whether conflict minerals are used or not, and if there is a risk as a result of the use, we make efforts to avoid using them.

Policy for Human Resources

Human Resource Policy

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

Action Guidelines

- Respecting the rights of our employees, we eliminate discrimination and harassment in employment, and avoid the use of forced labor or child labor.
- We secure and foster human resources who help pass down our quality products principle to the following generations. To this end, we provide learning opportunities and other programs to support the career development of our employees.
- We strive to smoothly introduce a personnel system that ensures that people with different qualities can fully realize their own capabilities into our Group.

Basic Philosophy

Human resources 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.

Respecting Diversity

Basic Philosophy

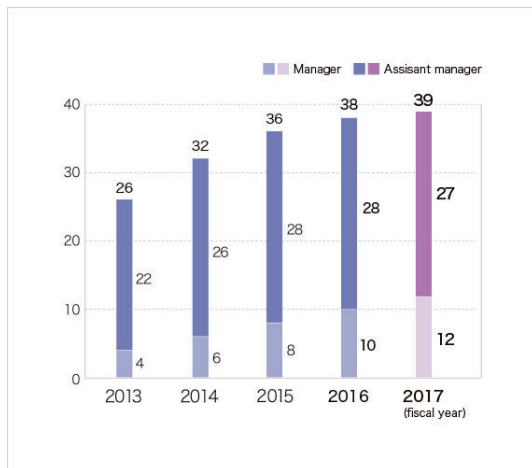
We consider diversity to be one of our most important management strategies as we believe that diversity and inclusion are essential for companies to attain sound growth and ensure happiness for all employees. We strive to promote diversity in order to utilize new values and ideas coming from an employee-friendly workplace that accepts different people regardless of their gender, age, disabilities or nationality.

Strengthening and Maintaining Initiative to Promote Active

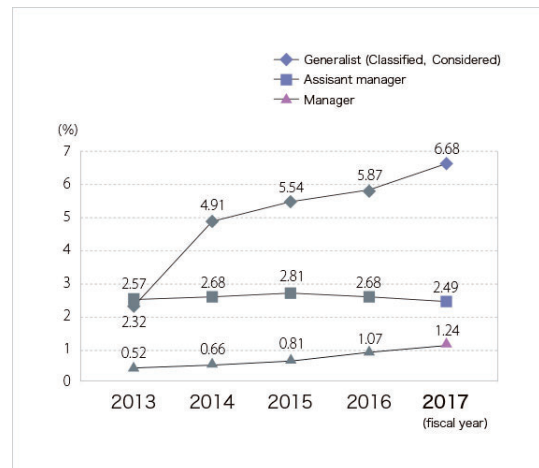
Participation of Women

As a first step to promote diversity, we started building a more female-friendly working environment in 2013. We believe the active participation of women is a driving force to change corporate culture and the minds of management and other female employees. One example of our efforts is that one female employee and her supervisor tried working together on higher level tasks nine months. To accomplish these tasks, the supervisor helped the employee by giving advice throughout the process. We also held lectures and training sessions for all managerial staff to deepen their understanding of diversity management. Furthermore, in all departments including our domestic group companies, general managers formulated action plans that suited their own departments. We gave awards to the departments with outstanding initiatives. We are also expanding systems to create more female-friendly working environments.

Receiving approval for those activities, NGK SPARK PLUG CO., LTD. was selected as one of the New Diversity Management Top 100 in fiscal 2017 (sponsored by the Ministry of Economy, Trade and Industry), won the Outstanding Performance Award 2014 for Women's Empowerment, Honorable Mention for Women's Empowerment "Powerup" Award 2015 from the Japan Productivity Center, and was chosen for the Aichi Women's Brilliance 2018 Award for Excellence. Our company's initiatives have been recognized throughout the industry.



Number of Female Employees
in a Managerial Posts by Fiscal Year



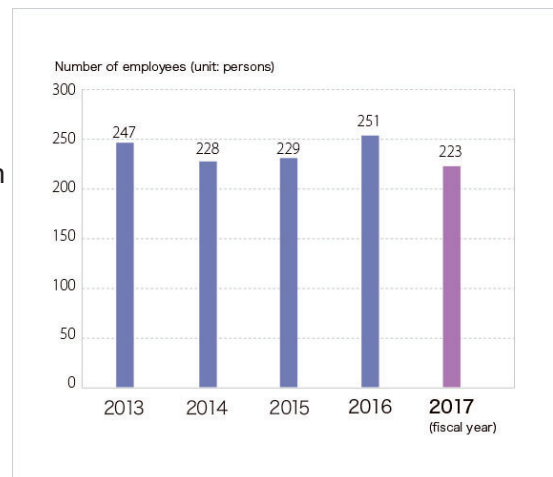
Proportion of female employees to the
whole workforce corresponding to regular
full-time position

Utilizing Retired Employees

Since a labor shortage is expected due to a declining birthrate and an aging population, providing job opportunities for senior citizens has become an important issue since the minimum age for receiving national pension has increased.

Starting in 2001, we have introduced a post-retirement re-employment system for retired employees so that their wealth of knowledge and expertise are effectively utilized. In fiscal 2017, 38 seniors began took advantage of this opportunity and 223 senior employees in total are working.

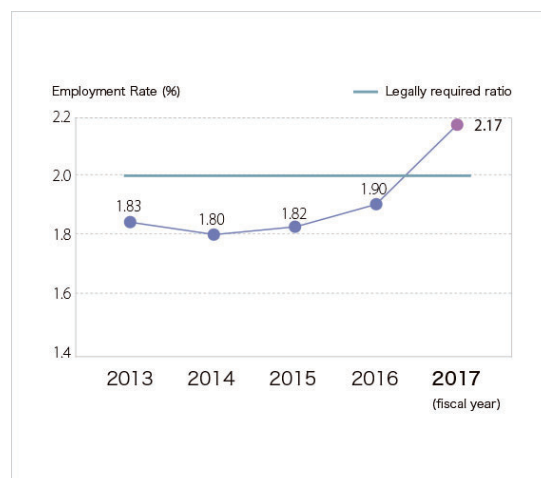
We are also working hard to prepare an environment that meets the needs of senior workers; our company has taken into consideration the aptitudes, motivation and abilities of our senior employees.



Number of Retirees Reemployed under the
System

Employment of the Disabled

We established Nittoku Smile Co., Ltd. in order to promote employment of handicapped workers and it was certified as a special subsidiary in January 2018. We aim to create a comfortable environment for our handicapped. The percentage of handicapped employees in fiscal 2017 rose to 2.17%, reaching the mandated employment rate of 2.0%. Furthermore, in June, we have met the fiscal 2018 mandated employment rate of 2.2%, and we continue to create a better working environment by expanding our business accordingly.



Percentage of Disabled Employees

Next Generation Management Global Development

In order to foster leaders for the next generation, we have held a “Global Next-Generation Management Personnel Development Program” for discovering and developing people eligible as candidates for the next-generation of management regardless of nationality since 2016. We hire and recruit employees regardless of nationality and provide opportunities and environments that enable every employee to do meaningful work.

In these recent times of great change, the program is intended to offer learning opportunities to personnel who represent the next generation, and is called “HAGI” after the “Shokasonjuku” cram school located in the city of Hagi in Yamaguchi prefecture, from where many talented people went out into the world at the end of Edo period. The program operates with our company president as its principal.

Focus on Employing Non-Japanese Nationals

We have been working on human resource recruitment adapted to the global organization in response to rapid globalization.

Since 2013, we have started putting a particular focus on employing non-Japanese nationals in our new graduate recruitment and have consistently employed at least three non-Japanese students each year. Moreover, recently we have not only been putting efforts into employing foreign students at Japanese universities, but also non-Japanese students who have learned Japanese at universities overseas and wish to find work in Japan.

Initiatives that Consider Work-Life Balance

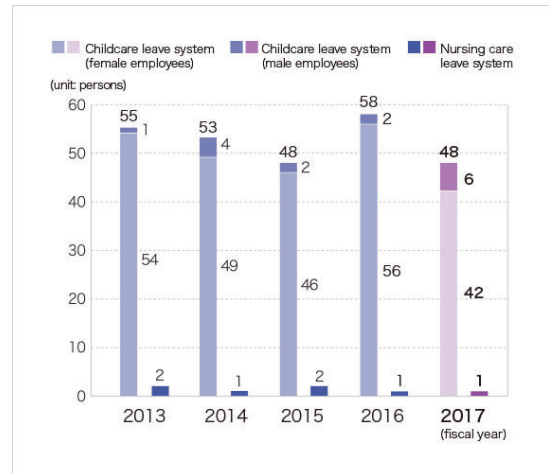
We are promoting initiatives improve the work-life balance of employees. As a part of it, we have launched a “Labor Reform Committee “with both employees and employers and reviewed the work-life balance of our employees aimed at becoming a company where every employee is able to work energetically. The number of employees on child care leave is approximately 50, and 98% of female employees are eligible for paid family leave.

Recently, male employees take leave every year as well.

Almost all employees returned to work after the leave. In

2015, we changed the short working hour system by extending availability from the conventional term of the first

grade of elementary school to the end of the third grade. This makes it possible for the employees both to work and spend time with their children. We introduced another short working hour system for nursing care since 2017. We will continue to work creating an environment that allows our diverse staff to continue to be active in their respective workplaces.



Number of Employees
Using the Leave Schemes

Human Resource Development

Basic Philosophy

We aim at the development of those who can communicate the company's traditional attitude of emphasizing quality-oriented principle to younger employees, and also those who are dependable and have the ability to cope with changes inside and outside the organization and follow through reforms. To this end, we implement diverse education and training programs systematically, based on our corporate Human Resources Development Concept, with the aim of ensuring continuous capacity building of employees.

Education / Training Programs

Our education and training activities consist mainly of OJT (on-the-job-training), through which employees are trained to acquire technologies and knowledge in their normal working situation. We also offer OFF-JT (off-the-job-training), providing employees with new technologies, knowledge, and skills outside their respective workplaces.

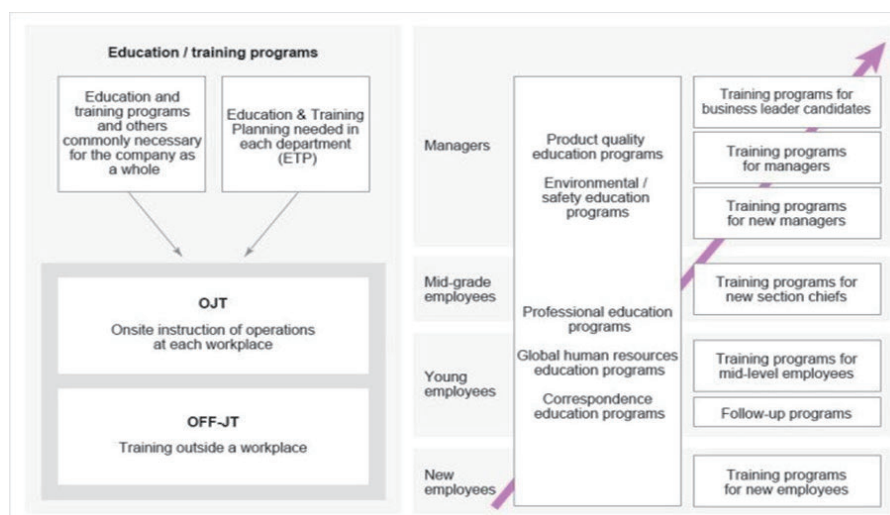
We have a wide range of OFF-JT programs that include training by organizational level and role to provide necessary knowledge and skills, product quality education, environment and safety education, manufacturing education, education in global business and career development support.

During fiscal 2017, 7,782 employees participated in OFF-JT programs.

The Strategic Human Resources Department is promoting the ETP (Education & Training Planning) system which is intended to improve the ability of employees necessary for individual departments besides provision of the education programs. In reference to the abilities needed by the company in the expected role evaluation of the newly introduced personnel management system, those necessary for the individual departments are specifically defined. Then the system will be implemented by conducting the education and training systematically for improving the specific ability. Evaluation and education in the respective departments for the ability improvement are coordinated so that the system is operated to achieve the companywide improvement for competitiveness.



Education and training



Education and Training System Diagram

Implementation of training

	FY2015	FY2016	FY2017
Total hours of training*	82,059	84,816	86,252

*The total hours of training: the hours x the number of students, for training (level-specific training, global training etc.) conducted by the Strategic Human Resources Dept.

Efforts to Upgrade Monozukuri Skills

NGK SPARK PLUG CO., LT. is a manufacturing company, maintaining and creating a new manufacturing site which helps to connect both values and information by utilizing IoT and AI. We continually provide education and training on necessary skills at the appropriate time at the Monozukuri (Manufacturing) Education and Training Center.



Monozukuri Education and Training

At the Monozukuri Education and Training Center, we prepare practical experience kits and have the elaborated curriculum corresponding to the level of knowledge and skills of the trainees (levels 0-3) so that they can complete the work on an interactive basis in the small group. The education and training are centered on “safety, quality, maintenance, and improvement”, based on which we establish rules to be observed by the trainees. We place importance on development of human resources through the education and training so that they are well adapted to social life.

Since establishment of the system in 2014, we are providing education for new employees (Level 0), education for departmental transferees, seminars for suppliers, education for general applicants, and education for manufacturing departments. We have upgraded those programs to support overseas business activities and enhance the curriculums. Recently, we have engaged in developing on-site learning environment in order to maintain and enhance manufacturing skills at the overseas factories.

Human Rights and Labor

Basic Philosophy

The NGK SPARK PLUG Group respects the Universal Declaration of Human Rights and other international norms and has made respect for human rights a part of our corporate code of conduct and our human resource policy. In addition, the group rules that we share throughout the NGK SPARK PLUG Group forbid discrimination on the basis of nationality, race, ethnicity, religion, sex, marital status, pregnancy, ideology, sexual orientation (LGBT), disabilities, and participation in labor unions, as well as all forms of harassment, child labor, and forced labor. In hiring and employment, too, we stipulate the granting of equal opportunity without discrimination.

Principles concerning human rights and labor are incorporated in the ten principles of the United Nations Global Compact which we joined in November 2016. The Group supports these principles and will connect them to our further activities.

The Status of Employees

NGK SPARK PLUG Group, total number of employees

	FY2013	FY2014	FY2015	FY2016	FY2017
Non-consolidated	5,809	5,823	5,829	5,719	5,727
Consolidated	12,760	13,197	14,524	14,926	15,322

NGK SPARK PLUG Group, form of employment (as of March 31, 2018)

Regular employees	Temporary employees
5,727	303

NGK SPARK PLUG Group, status of employees (FY2017)

	Men	Women	Total
No. of employees	4,699	1,028	5,727
Average age	38.6	35.9	38.2
No. of years of service	16.4	15.2	16.2
Turnover rate	—	—	2.1
Average annual salary	—	—	¥6,570,683

Education and Awareness-Raising of Human Rights

Our Compliance Guidebook, issued in 2012, establishes matters including respect for human rights and the prohibition of harassment. The guidebook has been disseminated to employees to raise awareness of these issues.

Drawing on the United Nations Global Compact, which we signed in 2016, we will increase opportunities to offer education and information on human rights to raise awareness among employees. In our CSR Procurement Guidelines, we also require that business partners engage in respect for human rights.

Anti-harassment Measures

The company management and the labor union are working together to prevent any harassment and to protect the human rights of all employees.

Work Rules explicitly prohibit all sorts of behavior that constitute harassment, and we have an anti-harassment committee responsible for the prevention of such behavior by raising awareness through the company newsletter and provide level-specific training programs.

We have also prepared an environment that facilitates consultation, with consultation desks set up by labor and management in every factory and have also enabled consultation through our Corporate Ethics Helpline.

Labor-management Relations

Labor-management relations should be oriented to the combined employer-employee effort to contribute to society through the provision of good products and services. At NGK SPARK PLUG CO., LTD., both labor and management understand their respective responsibilities and strive to improve the work environment through mutual trust and cooperation.

Labor-management conferences are held three to four times a year on individual workplace and companywide bases, providing communication opportunities. These are chances to discuss various topics including the company's situation and how to improve the labor environment, and opportunities for employees to have their opinions heard.

NGK SPARK PLUG Group labor union

The number of NGK SPARK PLUG Group labor union members	6,430 (As of March 2018)
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Since October 2017, our group company, Ceramic Censor, Nittoku Supertech Tounou, and Nittoku Supertech WKS made a labor union and became a branch of NGK SPARK PLUG labor union. As a part of NGK SPARK PLUG Group, we raise our spirit and work to tackle the problems at each workplace as a whole.

Reduction in Working Hours

We are working to reduce overtime in order to reduce total working hours. When pre-planned overtime is known about, the company management and the labor union confirm the situation in the workplace and engage in consultation designed to keep working hours within the target. As a result of addressing the issues discussed at the labor reform committee, we are starting no-overtime Wednesdays and prohibiting overtime in excess of five hours per day.

In fiscal 2017, we added a new regulation for having 10-hour intermission between working hours, and failing to comply with the rules is expected to be subject of the labor-management consultation as a strategy for suppressing overtime work.

Greeting Campaign

We have been engaging in our "greeting campaign" continuously since September 2008, encouraging employees to greet with each other, motivating them for work in the positive environment.

Once a month, in the morning and after work, representatives of the labor union and the company's officers and management stand on the sidewalks at the premises to greet arriving or leaving employees in an active manner.



Greeting Campaign

Group Company Response to Compliance

Group companies as a whole have been addressing the issue of information sharing for company compliance with the latest applicable laws and regulations. In the quarterly exchange meeting where, general managers of the group companies attend, the briefing is made with respect to the policy based on current trends in applicable laws and regulations. We have been working to develop the group-wide risk management system by sharing the problems raised by the individual group companies as those that they face and presenting case examples. The entire group continues to join hands in compliance issue.

Occupational Safety and Health Basic Policy

Basic Policy on Industrial Safety and Health

We strive for occupational safety and health as the starting point of business activities on the basis of respect for human life and dignity.

Action Guidelines

- Observe the laws and regulation, and voluntary standards on industrial safety and health.
- Prevent occupational injury and decrease risks by continuously improving on the management system and performance of industrial safety and health.
- Conduct efforts to increase physical and mental health and prevent health disabilities of employees.
- Disseminate this policy to all employees, promote awareness by education and enlightenment, and expand the industrial safety and health activities by involving all employees.

Basic Philosophy

Occupational safety and health are the most familiar theme for employees in their daily duties. It is the most important theme for enterprises as well in their efforts to provide a working environment in which employees are encouraged to do their best in operations. We are well aware that offering a secure and safe workplace is our important corporate responsibility.

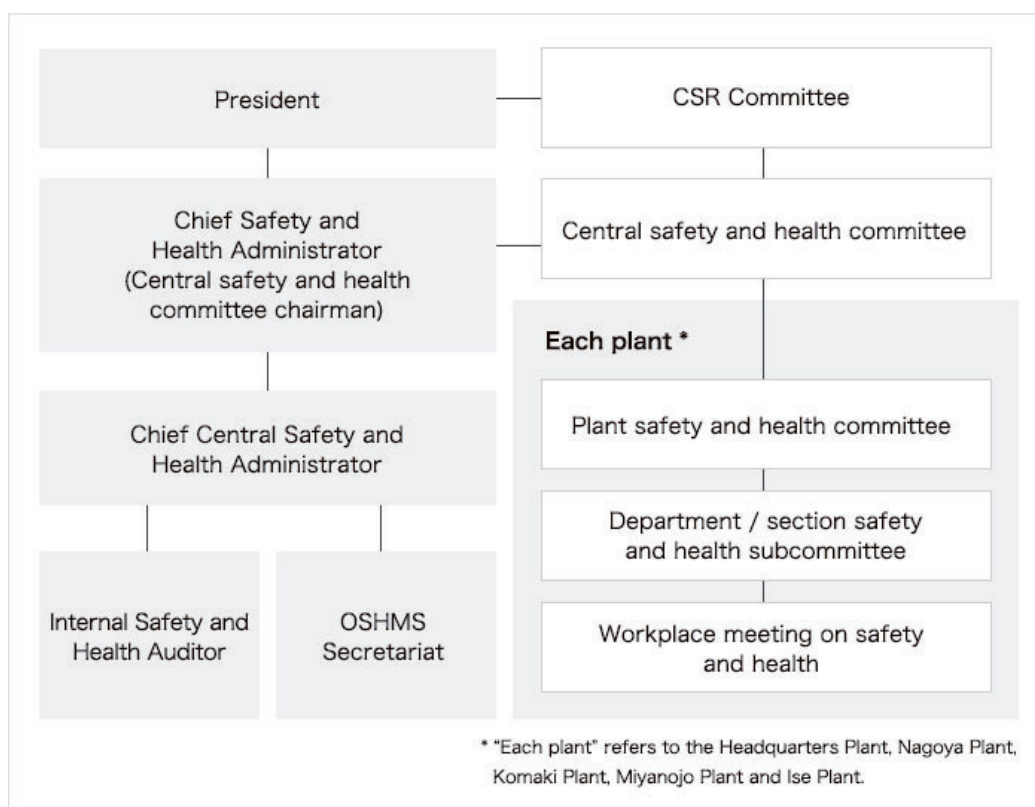
To this end, we established our occupational safety and health management system (OSHMS) in 2006, aiming to realize "zero injuries" and secure safety at all workplaces. We will continue strengthening our safety and health management activities at a company-wide level, aiming to establish a corporate culture of "safety first."

OSHMS

With the aim of eliminating on-the-job injuries and creating a comfortable, safe work environment, we have established and implemented an in-house occupational safety and health management system (OSHMS) while introducing OHSAS or an entire system such as manual and standard, and JISHA*1 for actual application and activities. We are accredited as complying with JISHA OSHMS Standards.

Each plant and office set safety goals and safety plans in accordance with our OSHMS guidelines, aiming to conduct OSHM activities based on a "total involvement" principle. To attain a step-by-step improvement of our safety status, these progress and results of such OSHM efforts are verified by our internal safety and health auditors as well as the plant safety and health committee and the central safety and health committee.

*1 JISHA: JISHA system is a standard examined by Japan Industrial Safety and Health Association (JISHA), and organizations accredited by JISHA, incorporating items as the incidence typically practiced in Japanese workplace, for example, KY activities, Hiyari-Hatto (near-miss) activities, and 4S activities.



Safety and Health Promotion Organization

Targets & Results for Fiscal 2017

1. Elimination of Work-related injuries

Fiscal 2017 Target	Fiscal 2017 Result	Evaluation	Fiscal 2018 Target
Elimination of injuries in trouble shooting	We reviewed our work methods and upgraded our work (non-structural measures) and maintain factory safety (structural measures) by understanding current the status of troubleshooting through safety observations and by recognizing risks through risk assessment.	○	•Check and review work relating to major issues at work by leaders.
Full understanding of the risk level of workplace	Risk assessment was conducted as scheduled at each workplace for full understanding of risk levels. Also, risk management was implemented according to how serious the risks are.	○	•Confirmation and understanding of risk management results.
Promoting safety observation by management supervisors.	Safety observation was implemented by management supervisors and safety observation was improved in every workplace.	○	Daily safety management practice 5-5 observation* is implemented.

*"5-5 observation" is the activity which management supervisors at work do fixed point observations both in the morning and the afternoon for five minutes every day.

2. Improvement of Work Environment

Fiscal 2017 Target	Fiscal 2017 Result	Evaluation	Fiscal 2018 Target
Improvement of work environment of workplace (Health aspect/ Safety aspect)	Conducted working environment measurement, based on which the working environment was improved. Continued Stop! fall disaster PJ related activities for promoting improvement.	○	• Improvement of work environment of workplace (Health aspect / safety aspects)

3. 3. Promotion of Health

Fiscal 2017 Target	Fiscal 2017 Result	Evaluation	Fiscal 2018 Target
Self-management promotion of a healthy mind and body	Conducted checking on employee's stress tolerance.	○	• Self-management promotion of a healthy mind and body
Strengthen collaboration between healthy employees and employees with suspected physical and/or mental health problems at workplace.	Held health promotion fair, and lecture on health.	○	Strengthen collaboration between healthy employees and employees with suspected physical and/or mental health problems at workplace.

4. Enhancement of Education, Training, and Enlightenment

Fiscal 2017 Target	Fiscal 2017 Result	Evaluation	Fiscal 2018 Target
Promotion and implementation of workplace safety and health education	We hold various seminars for health safety and health education and handling chemical substances. In fiscal 2017, we continue to hold a conference for safety and health, and environment at every factory.	○	Promotion and practice of safety and health education at the workplace.
Familiarization with “On-the-spot risk prediction.”*1 and “Po•Ke •Te• Na •shi” program. *2	Through workplace patrolling and greeting activities, “On-the-spot risk prediction” and “Po•Ke •Te• Na• Shi”*2 were implemented.	○	Familiarization with “On-the-spot risk prediction.”*1 and “Po•Ke •Te• Na •Shi” program.”*2
Promotion of traffic safety awareness activities by conducting risk prediction driving.	Implementation of traffic safety campaign through joining local traffic safety activities and taking actions to raise traffic safety awareness.	○	Promotion of traffic safety awareness activities by conducting risk prediction driving. Promotion of traffic safety awareness activities by conducting risk prediction driving.

*1: “On-the-spot risk prediction” refers to the activity performed in our company for confirming hazardous spot and procedures prior to work that is infrequent or has not been performed for a long time.

*2: “Po•Ke•Te•Na•Shi” (Pocket-Phone-Handrail-Shortcut-Pointing”) is a general term indicating precautions to protect workers from being involved in an accident during walking on the workplace, for example, “Do not walk with hands in Pockets.”, “Do not use the cell Phone during walking.”, “Make sure to hold the Handrail while ascending or descending stairs.”, “Avoid oblique crossing (Shortcut)”, and “Never fail to conduct Pointing and calling at the point specified for conducting such practice.

Occupational Safety Activities

Basic Philosophy

We have been conducting various safety activities for prevention of accidents besides recurrence prevention. Aiming at establishment of safety culture from the viewpoint of “personnel”, “object”, “mechanism”, we are taking the initiative to give the first priority to safety.

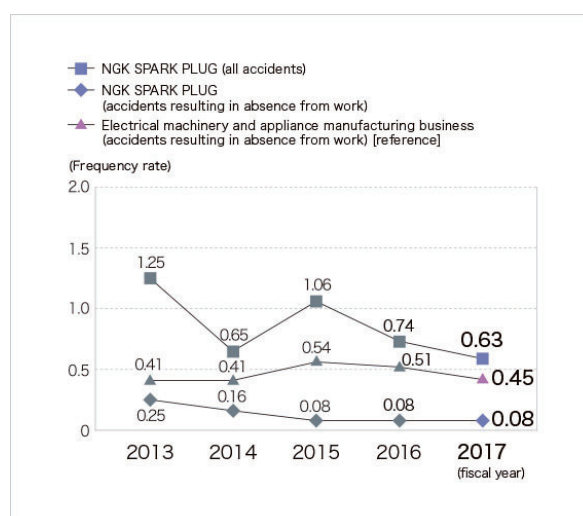
Toward Elimination of Occupational Accidents

In fiscal 2017, the total number of accidents was 8 (fiscal 2016 : 9 cases), and the total frequency rate was 0.63.

One out of the 8 cases were the accident requiring leave from work (fiscal 2016 : 1 case). In this case, the employee whose hand was crushed during the operation. As a result of the accident, our company, along with our domestic and overseas group companies conducted full inspections of equipment and additional inspections for older equipment starting in April 2018. We will continue to take the lead in safety observations, pointing and calling, “Po•Ke•Te•Na•Shi” program, and on-the-spot risk prediction for eliminating occupational accidents.



Safety observation



Frequency rate of NGK SPARK PLUG CO., LTD. covers the case of temporary workers Frequency Rate of Accidents

Our calculation of occupational accident frequency rate in 2017 was reviewed by Japan Quality Assurance Organization (JQA) and we received the following verification report.

Social and environmental information verification report
(Please refer to page 112)

Risk Assessment (RA) Initiatives

Risk assessment (RA) is the core activity of our occupational safety and health management system (OSHMS). We have reviewed diverse potential risks resulting from workplace equipment, chemical substances, and work at every workplace and evaluated them to take hardware/software countermeasures (residual risk management), prioritizing the most dangerous risks. Also, the director of the operations department has conducted operation observation for higher potential risks to improve the working environment. In accordance with trends towards strengthened regulations, we have reviewed and implemented a new approach for evaluating chemical substances.

Improvement of Working Environment

We conduct working environment measurements based on laws and regulations, targeting workplaces that handle chemical substances and workplaces subject to significant dust pollution and severe noise. Plants and operational sites that have been classified in the second or third management category are especially encouraged to implement effective solutions so that they can be reclassified in the first management category.

We also take measures to prevent cases of heat stroke in the summer by measuring the humidity and temperature in hot workplaces, encouraging an adequate intake of water and salt, providing cooling gear and the like.

In our offices, we appropriately control the level of lighting, temperature and humidity to ensure that the environment is suited to the work. In winter, we install humidifiers to help prevent the spread of colds and influenza. Continuously engaging in the activities under the “STOP! Falls Project” being run by Japan’s Ministry of Health, Labor and Welfare, labor and management united as a company to promote activities aimed at eliminating falls, including coping with fall hazard areas and separating pedestrians and vehicles, obtaining input and countermeasures through the themes at workplace meetings, and raising awareness.

Enhancement of Education, Training and Enlightenment

We provide safety education to match each organizational level, including safety and health education for new employees, third-year employees, tenth-year employees, leaders, subsection chiefs and managers. Most of these educational trainings are now available to employees in domestic group companies.

We also hold a safety, health and environment conference at each plant every year as an awareness-raising activity for all employees. During the conference, we work to raise employees' awareness of safety and health through such means as introducing safety and health initiatives and providing experiences with risk simulators. We also hold the conference for our suppliers to inform of our safety and health initiatives.

We revised the "Handbook for Safety and Health Management" distributed to all employees as a tool for building a safety culture at NGK SPARK PLUG CO., LTD. Reading through the handbook and other uses of it in each workplace translate into safe conduct by individual employees. Managers and supervisors on the workplace also carry out workplace patrols, risk prediction and share examples of Hiyari-Hatto (near misses), acting as the leaders of workplace safety and health management. The status of these workplace activities is confirmed through internal audits and other means.

Safety and Health Education and Training in Safety Training Dojo

In order to provide education with a policy of cultivating the sensitivity of employees to be aware of risks and avoid accidents, we established the Safety Training Dojo in part of the Monozukuri Training and Education Center in March 2013.

With the simulation equipment, employees can virtually experience accident risks and the circumstances in which they occur through simulations of industrial accidents that are difficult to communicate verbally. There are 35 different kinds of equipment which makes you experience pinching or entanglement with accident scenarios that could happen in the workplace. In fiscal 2017, about 2000 employees of NGK SPARK PLUG CO., LTD. and group companies took the course. Ever since we started operating the virtual reality simulation equipment, many participants have learned the potential danger of fall and overturn. In fiscal 2018, we intend to improve education aimed at the zero occupational accidents.



VR experience

Standing sentry activity for observance of rules led by Safety and Health Committee

Safety and Health Committee promotes the activity for observing rules joined by the directors and the factory directors in order to have safety-minded employees and a safe working environment. To avoid accidents especially while walking, we focused on “Po•Ke•Te•Na•Shi” system and all of us work together to eliminate labor-related accidents.



“Po•Ke•Te •Na •Shi”
awareness poster

Health Promotion Activities

Basic Philosophy

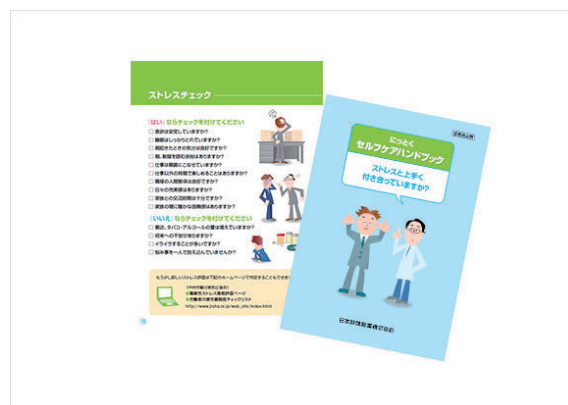
We announced "Being your best physical and mental condition to your workplace and bring them to your home with good smile" as our company slogan. Self-discipline is a key to the maintenance of one's condition, and we promote employee's autonomous health management efforts. We also include health information in the company newsletter to raise employees' health consciousness and promote self-management.

Health Checkups

Our industrial physicians, general practitioners and public health nurses always follow up with employees with respect to findings in their health checkups and refer them to medical institutions when necessary. These coordinated efforts allow employees to maintain and improve their own health.

Strengthening of Mental Health Care

We are working on in-house and external Line-Care educational programs for managers and implementing to read the Self-care hand book in our workplace to make our employee prevent awareness of disease and self-management of health. Also, we are strongly working on in-house lectures and setting up the Support-line for employees who feel stress and problems mentally.



The Self-Care Handbook

We also carry out stress checks and analyze the mental and physical impacts that the workplace environment has on employees for prevention of mental illness among employees due to stress in our efforts to create a safe and secure workplace environment.

Thanks to the evaluation with respect to our activities, we have been certified as "Corporate Health Achievement Award Winners – White 500" sponsored by Ministry of Economy, Trade and Industry, and Nippon Kenko Kaigi.

Initiative to prevent infectious diseases

To protect employees from the seasonal influenza every year, we strive to prevent the spread of infection. Particularly regarding group infection at workplaces, which may affect our daily operations, we are ready to cooperate with the relevant divisions to implement immediate and intensive measures. During the flu season, we issue weekly reports so that all employees can share the information and take effective countermeasures. In addition, we are attentive to information on candidate viruses for novel influenza at all times by collecting relevant information.

Efforts by NGK SPARK PLUG CO., LTD. Health Insurance Society Working together with the company and the labor union, the health insurance society provides a wide variety of programs to support the mental and physical good health of member workers and their families. Specifically, health management and disease prevention efforts conducted by the health insurance society include: metabolic syndrome improvement / prevention programs; subsidies for flu vaccination; and other health management promotion programs such as walking tours and bus-hiking tours.

Social Contribution Policy

Social Contribution Policy

As a good corporate citizen, we at the NGK SPARK PLUG Group aim to contribute to society through the effective use of management resources.

Action Guidelines

- We focus on the following activities:
 - Activities closely related to our business fields and also to local communities
 - Activities that respect the cultures of individual countries and local communities, as well as activities that contribute to society such as traffic safety education programs
 - Activities that contribute to the next generation society, focusing on environmental conservation, science, and education, as well as cultures to be bequeathed to the next generation, etc.
- We strive to create a corporate culture that encourages executives and employees to participate together in social contribution activities as social citizens. We also respect and support their active involvement in society.

Basic Philosophy

The NGK SPARK PLUG Group respects local culture and customs in our established sites of the respective regions in the world while engaging in smooth communication with local communities. As members of those communities, we aim to work together in building a comfortable society, while striving to participate in regional development, environmental preservation, and other activities that contribute to society.

Global Eco Vision 2020

Environmental Policy

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

Action Guidelines

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

Basic Philosophy

Environmental issues are a common challenge for all mankind. Every member of the NGK SPARK PLUG's 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 fiscal 2016, we have drawn up a vision for our company and have been working under “Global Eco Vision 2020”.

We set four important environmental tasks, "Natural resources", "Global warming", "Toxic, hazardous chemicals" and "Key quality (Environmentally-Friendly products)", under Global Eco Vision 2020. By tackling these tasks through our business activities while defining

“Education”, “Compliance”, “Open communication” as foundation, we will work to enhance our manufacturing power, increase our brand value, and contribute to sustainable development of society.



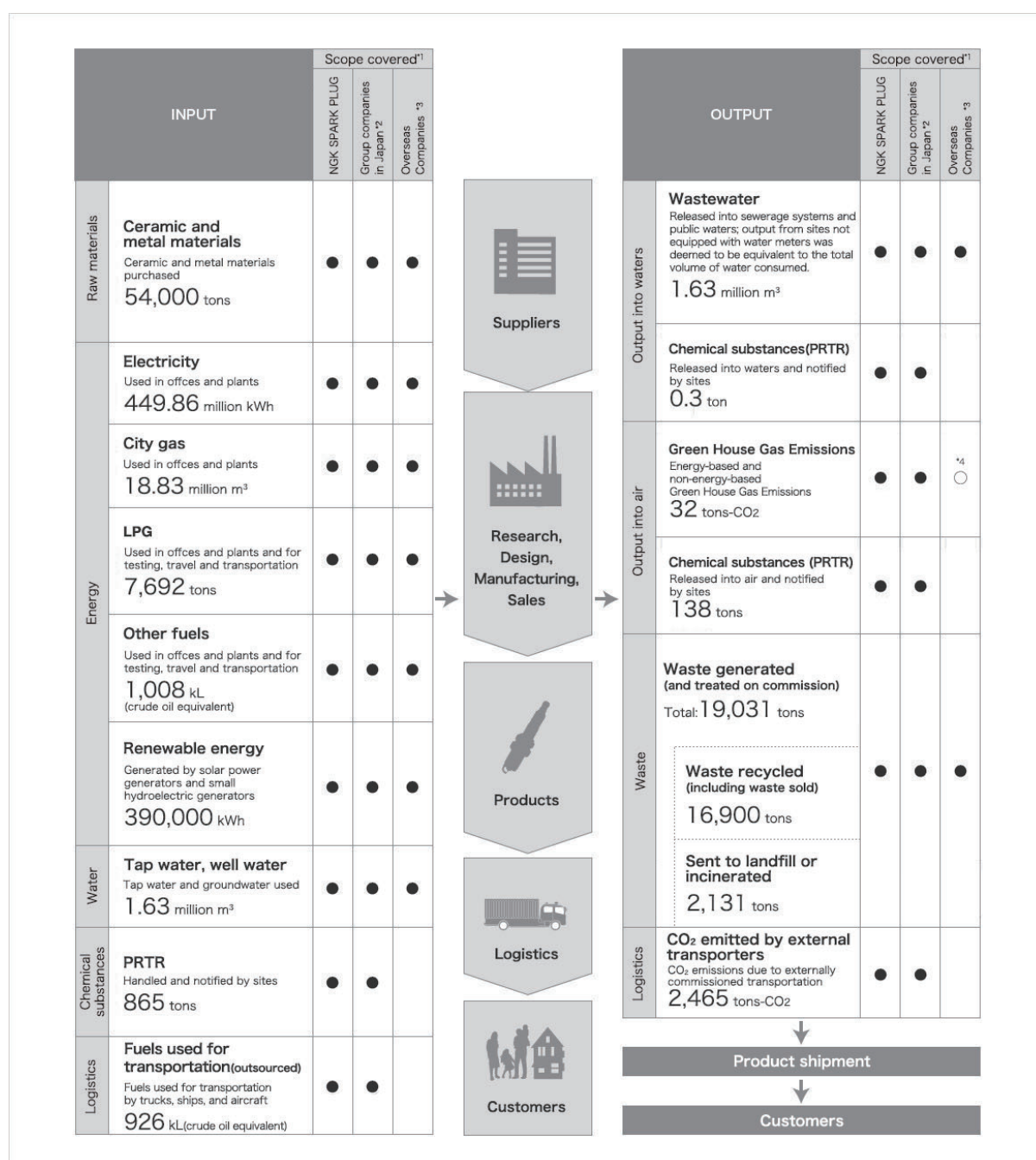
Global Eco Vision 2020 Environmental Action Plan and Results

Major items	Minor items	Targets for fiscal 2020	Results for fiscal 2017
Global Warming	Production	CO ₂ Basic unit 15% reduction compared to fiscal 2015 (Average yearly reduction of 1%) *As of April 2018, Upward adjustments to the targets	【Target】 CO ₂ basic unit: 2% decrease from fiscal 2015 【Result】 CO ₂ basic unit: 8.7% decrease from fiscal 2015 Conducted energy saving activities across the department by energy saving promotion sub-committee.
	Logistics	Promotion of efficient logistics	Optimized product transportation between plants.
Depletion of Resources	Waste	Promotion of reduction of waste material by reducing defective products	Reduced wastes by lessening the defective products generated in production.
		Promotion of product design which takes into consideration minimization of waste	Control wastes by improving the production structure.
	Water	Promotion of efficient water utilization	Reduced water usage amount by modifying facilities.
	Resources	Promotion of manufacturing while taking resource usage into consideration	Reviewed the ecological impact of our products' lifecycles from a production standpoint
Eco-friendly Products	—	Create a certification system for eco-friendly products and expand eco-friendly products	Strengthened commitment to the energy-efficient development Began plans for eco-friendly products
Hazardous Substances	—	Compliance with rules regarding ELV・RoHS・REACH	Implemented sharing and handling of cross-department regulations drafted by the Chemical Management Committee.
	—	Promotion of alternatives to environmentally hazardous substances	Implemented an alternative to Phthalic acid which will become restricted under RoHS in 2019.
	—	Elimination of HCFCs	Implemented plans to replace HCFCs with R-22 refrigerant.

Environmental Burdens from Business Activities

Environmental Burdens from Business Activities

Knowing what impacts our business activities have on the environment is the first step in carrying out environmental preservation activities. Our material balance, which expresses the amounts of our inputs (such as the raw materials and energy used by our Group) and the amounts of our outputs (such as the products shipped, and the wastes emitted outside the Group as the result of our business activities), is as follows.



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

*2 Domestic group companies: (scope of consolidated certification) NITTOKU ALFA SERVICE CO., LTD., NITTOKU UNYU CO., LTD., CERAMIC SENSOR CO., LTD., NTK CERAMIC CO., LTD., CERAMIC SENSOR NAKATSUGAWA CO., LTD., NANSEI CERAMIC CO., LTD., KAMIOKA CERAMIC CO., LTD., Spark Tec WKS CO., LTD., NICHIIWA KIKI CO., LTD., Spark Tech TONO CO., LTD., (outside the scope of consolidated certification) NITTOKU Smile NITTOKU DENSHI CO., LTD., NTK CERATEC CO., LTD.

*3 Overseas group companies: (manufacturing & sales organization) NGK SPARK PLUG [SHANGHAI] CO., LTD., CHANGSHU NGK SPARK PLUG CO., LTD., WOOJIN 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, (sales organization) TAIWAN NGK SPARK PLUG CO., LTD., NGK SPARK PLUGS (VIETNAM) CO., LTD., NGK SPARK PLUGS (PHILIPPINES), INC., NGK SPARK PLUG (AUSTRALIA) PTY. LTD., NTK TECHNOLOGIES, INC., NGK SPARK PLUGS CANADA LIMITED., BUJIAS NGK DE MEXICO S.A. DE C.V., BUJIAS NGK DEL ECUADOR CIA LTDA., NGK SPARK PLUG EUROPE GmbH, NGK SPARK PLUGS (UK) LTD., LIMITED LIABILITY COMPANY NGK SPARK PLUGS (EURASIA), NGK SPARK PLUG MIDDLE EAST FZE

*4 Overseas companies only collect results of CO₂ emissions.

We have received third party verification report below by Japan Quality Association (JQA) on calculation of Greenhouse gas emissions by energy usage, and the amount of water usage/waste generation in fiscal 2017.

Social and environmental information verification report
(Please refer to page 112)

Environmental Management

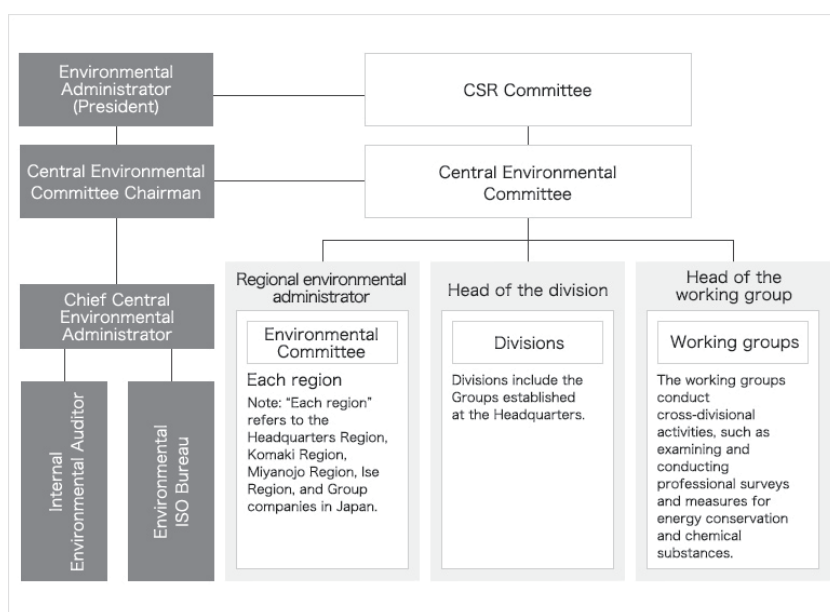
Basic Philosophy

Our environmental management system, operating on the environmental policy shared by the entire Group, ensures systematic and effective environmental preservation activities. Under this system, all Group companies strive to achieve the Eco Vision.

Promotion system

Our group has a matrix-type structure including business departments and respective regions, promoting environmental activities while having individual roles clarified. Each department is expected to manage its own targets on items relevant to business activities, for example, “Global warming”, “Natural resources”, “Toxic, hazardous chemicals”, and “Key quality” under the Global Eco Vision 2020 for the practice along with business activities. Meanwhile, we take the initiatives to such activities as compliance of regulations, and communication with local society mainly on the region basis in accordance with action plans. Various sub-committees are set up as the cross-functional team across the department for promoting activities.

The activities will be confirmed with respect to the progress toward the target, and task in Central Environmental Committee at which President, directors, department managers, environment control managers in the respective regions, and chairpersons of the sub-committees are present for continuous improvement.



Environmental Activity Promotion Organization

The Establishment Status of our Environmental Management System

We received ISO 14001 consolidated certification for NGK SPARK PLUG CO., LTD. and 10 group companies in Japan. In fiscal 2016, we received ISO14001:2015 certification on December through upgrade audit.

Other domestic and overseas group companies have already been certified for environmental management systems including ISO14001 certification, individually, resulting in 18 overseas group companies which have received the certification in the end of the fiscal 2017.

ISO 14001 Certified Locations
(Please refer to page 108-109)

Environmental Risk Management

Inherent in business activities are various risks including environmental incidents and pollution. NGK SPARK PLUG's GROUP identifies these risks and endeavors to reduce and/or prevent them

PCB Control

PCB wastes have been stored at our Headquarters Plant, Komaki Plant, and CS Nakatsugawa under strict control for proper disposal.

We plan to complete proper disposal of PCB waste stored at the Headquarters Plant and Komaki plants in fiscal 2018.

On-site Confirmation of Waste Material Treatment

We regularly visit our waste disposers to confirm that consigned waste materials are being processed in accordance with our agreement. In fiscal 2017, we visited 74 companies.

Handling of Asbestos

We have been taking appropriate measures to prevent health hazards from asbestos. All asbestos used in our facilities has been completely removed. Some asbestos is still present in buildings as insulators, and we will continue to adhere to stringent control measures and periodical confirmation.

Preventing Chemical Leaks

In order to prevent soil and water contamination caused by chemical leaks, we have been implementing countermeasures involving equipment that includes preventing leaks through the development of double layered storage tanks and the early detection of leaks by installing pipes above ground. Wastewater treatment facilities of the respective plants discharge the wastewater only confirmed to be harmless through monitor measurement under routine management.

Drills for Emergency Situations

We hold regular drills for emergency situations to prepare for unforeseen accidents, etc. Each department identifies potential environmental accidents to prevent associated adverse environmental impacts.

Ceramic Sensor held drills for blocking drainage assuming that wastewater in excess of the maximum limit value accidentally flows outside the premise.



Drills for Emergency Situations
(NTK Ceramic Co., Ltd.)

Compliance Status

To ensure compliance with environmental laws and regulations as well as agreements with local municipalities, etc., we set stringent voluntary standards to prevent violations and complaints. In fiscal 2017, there were zero violations of laws or regulations in Japan, and one instance that demanded improvement concerning noise. Since we found problems on how we worked regarding noise complaints, we immediately carried out countermeasures, working to prevent recurrence.

Numbers of Violations (cases)

Company	2014	2015	2016	2017
NGK SPARK PLUG CO., LTD.	1	3	0	0
Affiliates (Domestic)	2	2	2	0
Affiliates (Overseas)	0	0	0	0

Numbers of Complaints (cases)

会社	2014	2015	2016	2017
NGK SPARK PLUG CO., LTD.	2	0	2	1
Affiliates (Domestic)	0	0	0	0
Affiliates (Overseas)	—	—	—	—

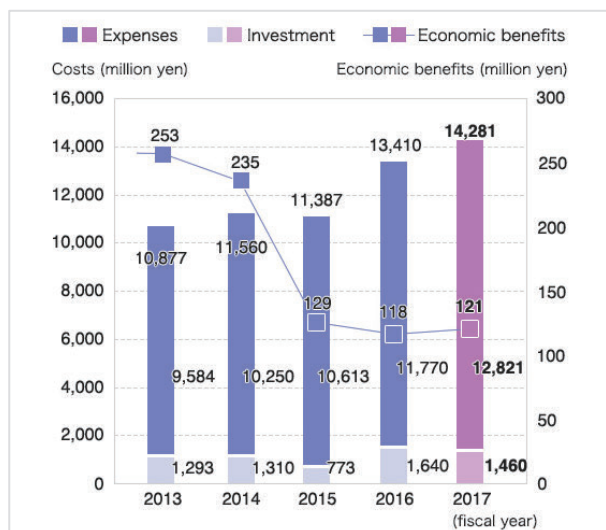
Handling Violations and Complaints in Fiscal 2017

	Company	Situation	Countermeasures
Complaint	Komaki Plant	Received complaints from neighborhood residents about the noise caused by lawn mowing on site in Northwestern corner of factory No14.	We setup soundproof sheets in the northwestern part of factory No. 14 to avoid noise from idling engines. We also changed to electric lawn mowers.

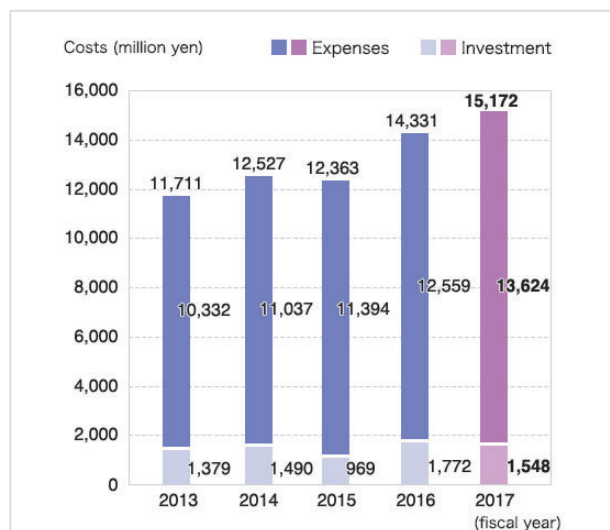
Environmental Accounting

What is important in promoting environmental management is to gain a grasp of the costs and effectiveness of environmental preservation activities. We have been adopting environmental accounting since 1999, and in 2003 the accounting scope was expanded to include the entire Group.

In fiscal 2017, our environmental conservation costs were 14,281 million yen on a non-consolidated basis, and 15,172 million yen for the Group, an increase of 5,9% over the previous fiscal year. The economic benefit associated with environmental conservation activities totaled 255 million yen on a non-consolidated basis.



Environmental Conservation Costs and Economic Benefits (non-consolidated)



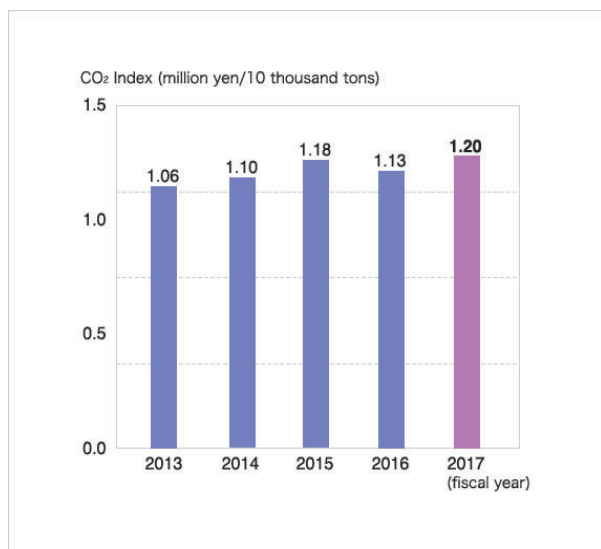
Environmental Conservation Costs (group)

Environmental Accounting
(Please refer to page 110-111)

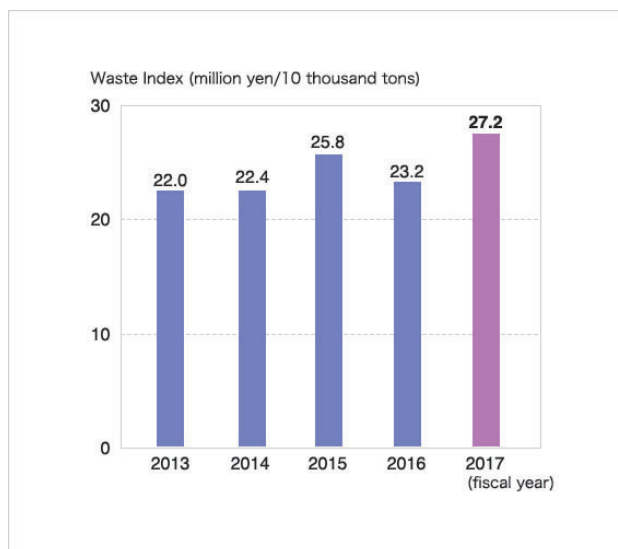
Eco-efficiency

We calculate eco-efficiency by determining net sales per unit of CO₂ emissions and generated waste, and endeavor to improve it.

In fiscal 2017, figures of CO₂ emissions and generated waste were lessened compared with those of the previous fiscal year resulting from modifying the plants and etc.



CO₂ Index
(Domestic group 【consolidated certification】)



Waste Index
(Domestic group 【consolidated certification】)

$$\text{CO}_2 \text{ Indicator} = \frac{\text{Net Sales}}{\text{Amount of CO}_2 \text{ Emissions by Production}}$$

$$\text{Waste Indicator} = \frac{\text{Net Sales}}{\text{Amount of Waste Emissions}}$$

Environmental Education

Environmental education is conducted to deepen employees' understanding of environmental issues and raise their environmental awareness.

In fiscal 2017, in addition to rank-specific education, we held four courses on “Environmental basics”, “Environmental management system”, “Calculation methods for substances with an environmental burden”, and “Environmental laws and regulations (for facilities).

Furthermore, we went to the departments related to these four laws and regulations and began providing on-site environmental law training focused on the necessary compliance.

In regard to the “Environmental Handbook” for employee education, we will enhance the content of the handbook to take in consideration the latest trends around the world.



Environmental education



Environment Handbook

Status of course participation (FY 2017)

Item	Number of times	Number of persons taking course
Course on environmental basics	11	134
Course on environmental management System	15	229
Course on calculation methods for substances	6	99
Course on environmental laws and regulations (for facilities)	9	126

Support for Suppliers

We offer our suppliers environmental education and support for establishing environmental management systems to acquire third-party certification. Since 2007 there have been applications for assistance from 43 companies, and 42 of them have obtained ISO 14001 or Eco-Action 21 certification. We continue to provide assistance to four companies configuring environmental management systems.

Environmental Management Classes Held in Fiscal 2017

Topic	No. of Companies Attending	No. of People Attending
ISO14001	7	9
Eco-Action	5	7

EMS Third-Party Certification Support Conducted

Topic	No. of Companies Attending (total sum)
ISO14001	6
Eco-Action	37

Environmentally-friendly Products

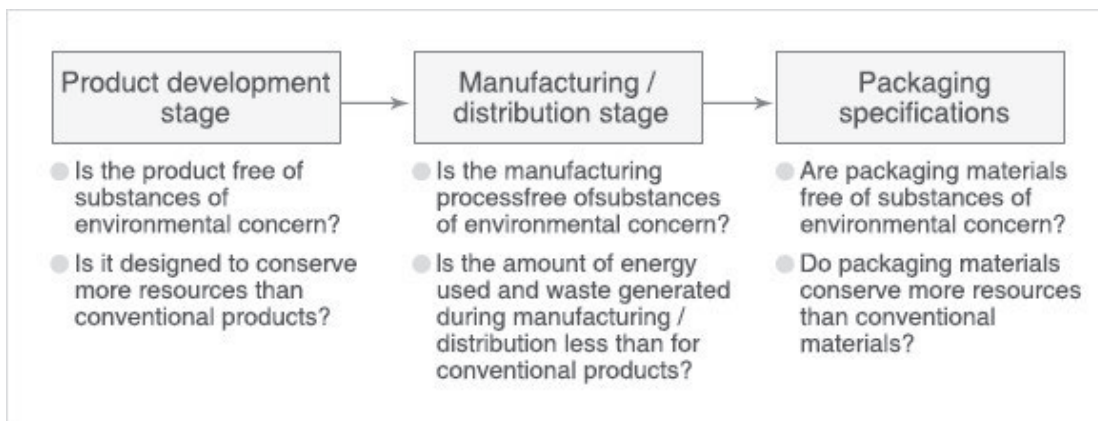
Basic Philosophy

As a manufacturing company expanding globally, we strive to meet the expectations of customers around the world and, in order to contribute to the global environment, to develop and provide environmentally friendly products. At the same time, we also work to constrain the environmental impacts generated during production and aim to reduce environmental impacts over the entire product life cycle.

Product Assessment

To reduce the environmental burden of a product over its entire life cycle, we carry out product assessments during design and when changing specifications.

During a product assessment, the existence of substances of environmental concern, the amount of energy used, etc. are confirmed at each stage of product design, process design and package design. If the assessment determines that there is a significant environmental impact, countermeasures will be taken before development is continued.



Developing Environmentally Friendly Products

Our company provides products that contribute to the environment, including spark plugs and automotive oxygen sensors that help improve fuel efficiency and purify exhaust gases from automobiles, as well as LED packages and cutting tools that are long-lasting and help conserve energy and resources. We are also undertaking development of new products in the environmental area, such as solid oxide fuel cells (SOFCs).

Since 2017, we have been enhancing activities to promote energy and resource conservation more than ever in the manufacturing process, by working these into the design stage. Through this, we will advance development of products that contribute to the environment in terms of both product functions and manufacturing processes.

Hazardous Chemical Substances

Basic Philosophy

In association with the growing public awareness of environmental issues, regulations regarding hazardous chemical substances have become increasingly severe year by year. Taking appropriate measures to such concern has become vital to the continuation of business. We have a three-step management system for handling substances of environmental concern:

1. Answering requests from customers, 2. Handling within the Group, and 3. Procurement from suppliers.

Naturally we ensure compliance with laws and fulfill customer requests. More than that, we aim to reduce the use and emission of substances of environmental concern so as to minimize their effect on the environment and human health.

Answering Requests from Customers

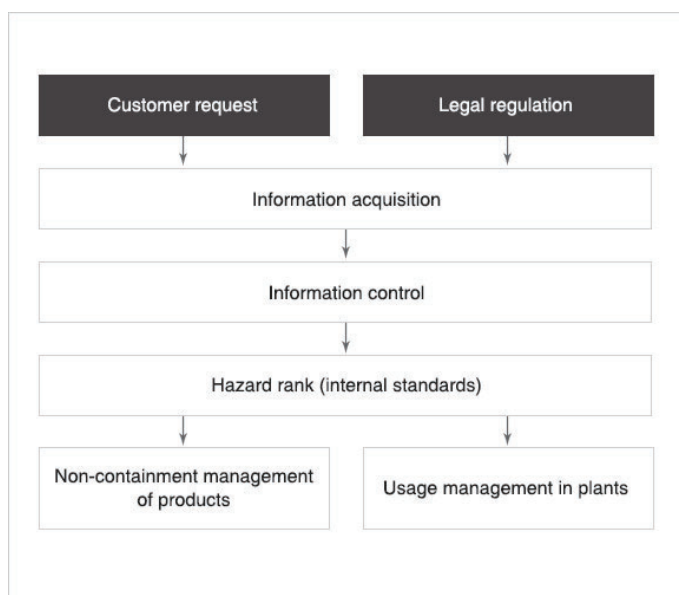
With the reinforcement of regulations on chemical substances contained in products, requests from customers in the automobile, electrical and electronics industry regarding improved compliance are increasing. The REACH Regulation of the EU has triggered an increase in the status of chemical substances contained in products; we are taking all the appropriate measures including submission of Non-Containing Declarations, submission of various data with IMDS, AIS, etc., and handling investigations and audits regarding our management systems.

Handling within the Group

To respond appropriately to increasingly strict chemical substance regulations worldwide, we perform non-containment management for products and usage management within plants.

For hazardous chemical substances, we set hazard rankings according to toxicity and the strictness of regulations and establish handling standards for each rank.

From here on out, we will work toward substitution of hazardous chemical substances and the strengthening of management, to assure compliance with laws and with the demands of customer



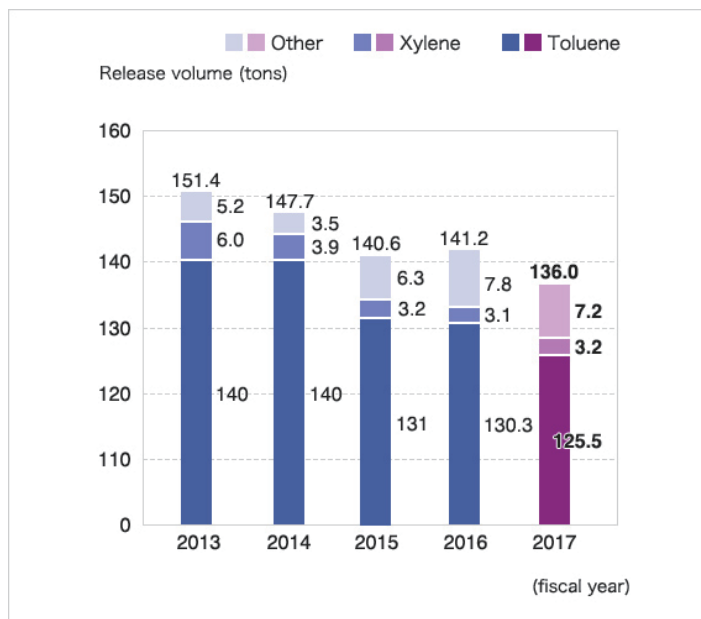
Management System

Hazard Rank

Rank	Handling standard	Substances covered
Prohibited	Use is prohibited.	Substances prohibited from use or strongly restricted by regulations.
Restricted substances	Safer substitutes will be sought, while making efforts to reduce the use of current substances.	Hazard level and toxicity are equivalent to prohibited substances, but an immediate changeover is impossible due to its special characteristics.
Monitored substances	Supplies need to be examined to find existence / non-existence of applicable substances.	Those not prohibited or restricted but that require monitoring.

Management of PRTR substance

Aiming at optimized management, the respective divisions have ensured to identify and totalize PRTR substances for clarifying handling volume, release volume, and transfer volume.



Emission Volume of PRTR Substances
(Domestic group /consolidated certification)

Procurement from Suppliers

To manage chemical substances contained in products appropriately, it is imperative that we gain the cooperation of our suppliers. For this reason, we request in our Green Procurement Guidelines that our suppliers not use hazardous chemical substances banned by NGK SPARK PLUG CO., LTD. We designate suppliers that meet our system and material standards as Green Suppliers. In collaboration with our Green Suppliers, we promote appropriate management of hazardous chemical substances.

Global Warming

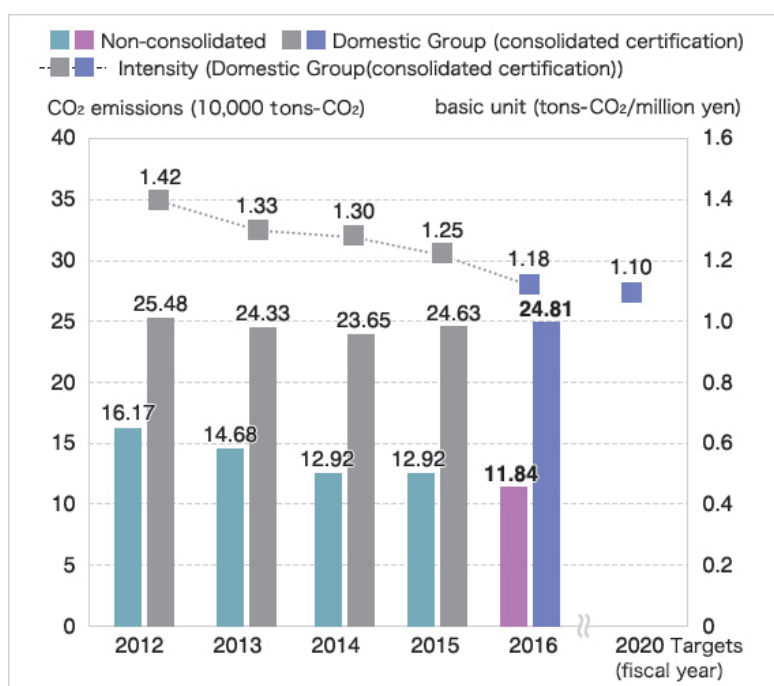
Basic Philosophy

Major climate change could cause the risk of hindering the establishment of a sustainable society. As a part of our activities to aid in mitigating climate change from medium and long-term perspectives, we set targets for CO₂ emission basic unit in fiscal 2020 under Global Eco Vision 2020. Aiming at achievement of the targets, we have been proceeding with fractionalization of energy management, and reduction in energy consumed by air conditioning system while focusing on building ventilation amount.

Achieving Target CO₂ emission basic unit in fiscal 2017

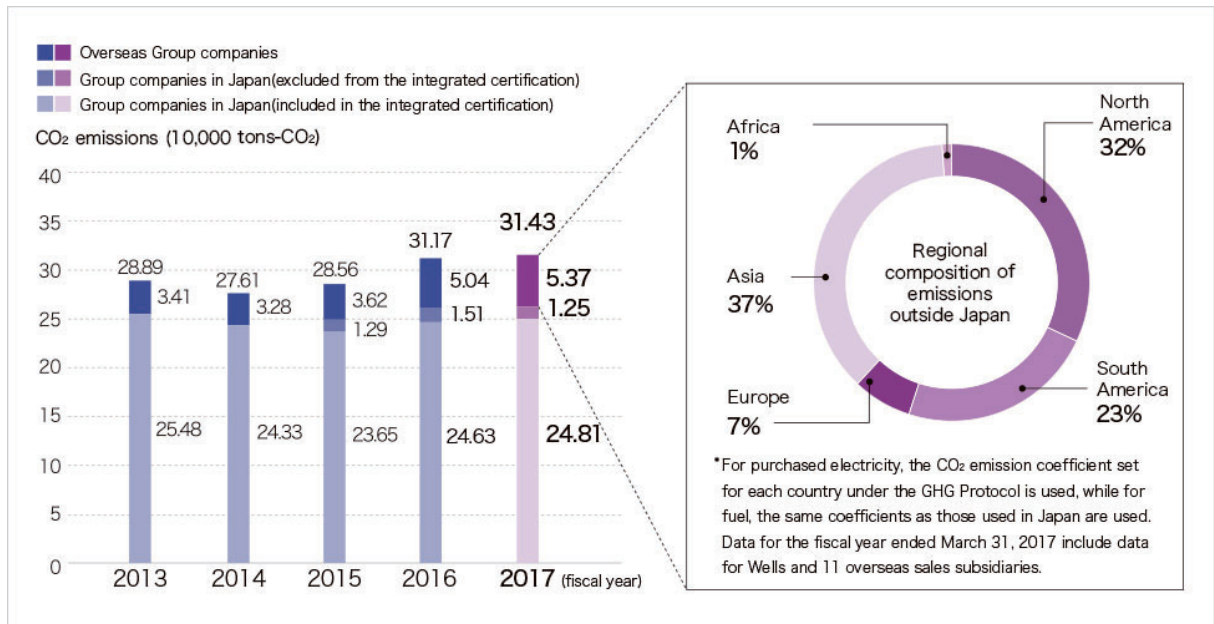
The CO₂ emission basic unit in fiscal 2017 was 1.18 tons/million yen, meeting the eco-vision target for 2020 of 1.23 tons/million yen in advance. (decrease by 5% as compared with fiscal 2015). This is because we used less energy by renovating factories and etc., in addition to our regular activities of energy conservation.

In fiscal 2018, we have made changes to the eco-vision 2020 targets in upward, and we will promote more energy saving aimed at improving the CO₂ emission by 15% (1.10 tons/million yen) compared to fiscal 2015.



Transition of Emission Volume of Energy-Origin CO₂ (Domestic group[consolidated certification])

*The denominator of the basic unit has been changed from sales to amount index in accordance with production sum.

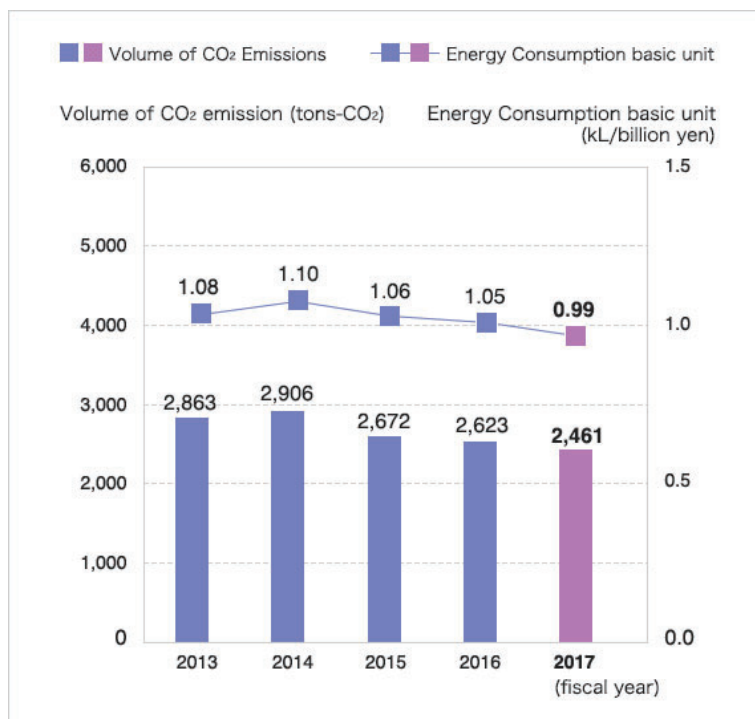


Transition of Emission Volume of Energy-Origin CO₂ (group)

Energy Conservation during Transportation

As a Specified Consigner designated under the Act on the Rational Use of Energy, we endeavor to reduce CO₂ emissions during transportation, proceeding with reduction in shipping distance by reorganizing/integrating plants, and reconsidering the waste-disposal service vendor.

In fiscal 2017, our energy usage basic unit was 0.99 kl/100 million yen, improved by 5.5% as compared with the previous fiscal year.



Trends in Volume of CO₂ Emissions as Energy
Resources (group)

Energy Conservation in Office

We implement daily energy-saving measures in our workplaces, including turning off lights and computers during breaks and keeping office air conditioning at moderate levels, 28°C in summer and 20°C in winter, to which we adjust by dressing lightly or adding layers of clothing in addition to setting our regular ventilating standard at offices by reviewing the amount of ventilation. We are also creating green curtains, installing arched sunshades and thermally insulating the outdoor units of air conditioners to reduce power consumption for air conditioning in the summer.

Use of Natural Energy

We promote the use of natural energy.

We installed three solar power generation units and one solar water heater at our Headquarters Factory. The Komaki Plant has a solar power generator unit that can generate a maximum of 107 kW of electricity. In overseas, the solar power generation units have been introduced into Woojin Industry Co., Ltd., and NGK Spark Plugs (India) PVT. LTD.

In fiscal 2017, we generated a total of 391,000 kWh sourced from natural energy in both domestic and overseas companies, which is equivalent to reduction of 225 tons of CO₂.

Depletion of Resources

Basic Philosophy

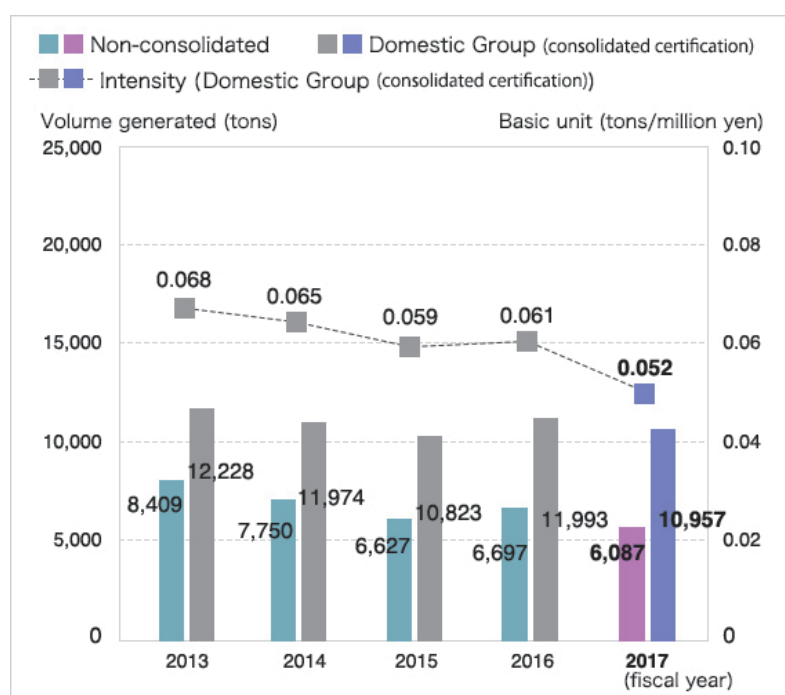
Our Group contributes to society by lowering defect rates in our manufacturing processes, reducing waste generated and further treating wastes to enable recycling, as measures to combat the depletion of resources.

And we contribute to the resolution of water resource issues by recognizing the tap water and well water used in our business activities as water resources, and by undertaking the reduction of usage, as measures to combat the depletion of resources.

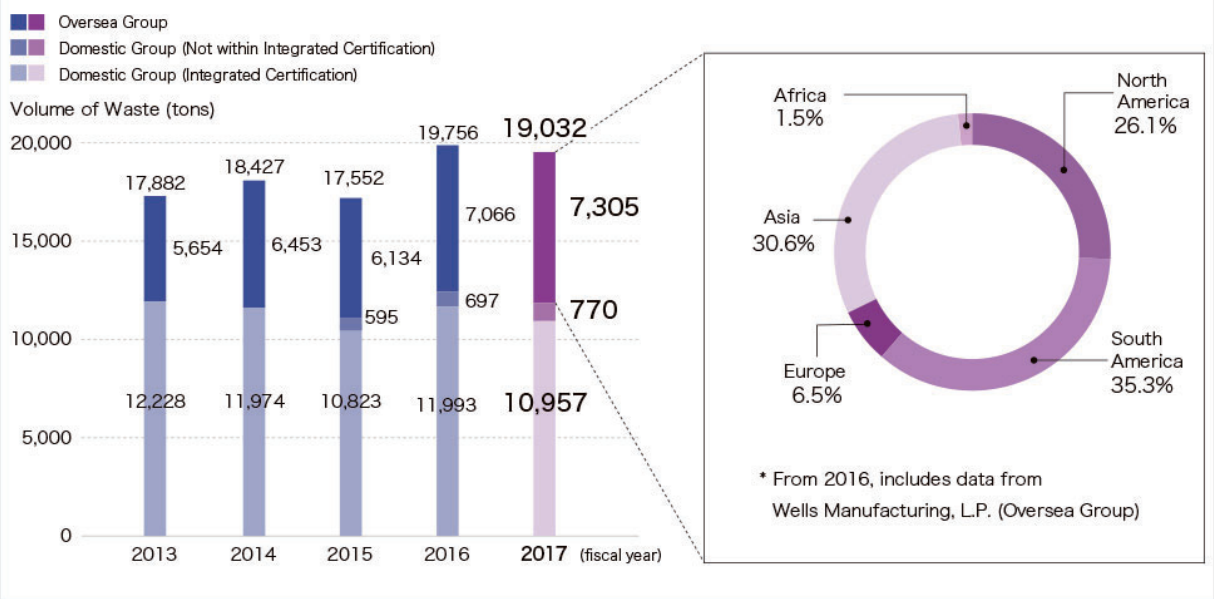
Reduction of Waste Generated

In fiscal 2017, the waste emission basic unit was 0.052 tons/million yen, improved by 15 % as compared with fiscal 2016.

In addition to our regular waste emission activities, we were able to reduce the amount of waste by updating the factories and etc. in fiscal 2017.



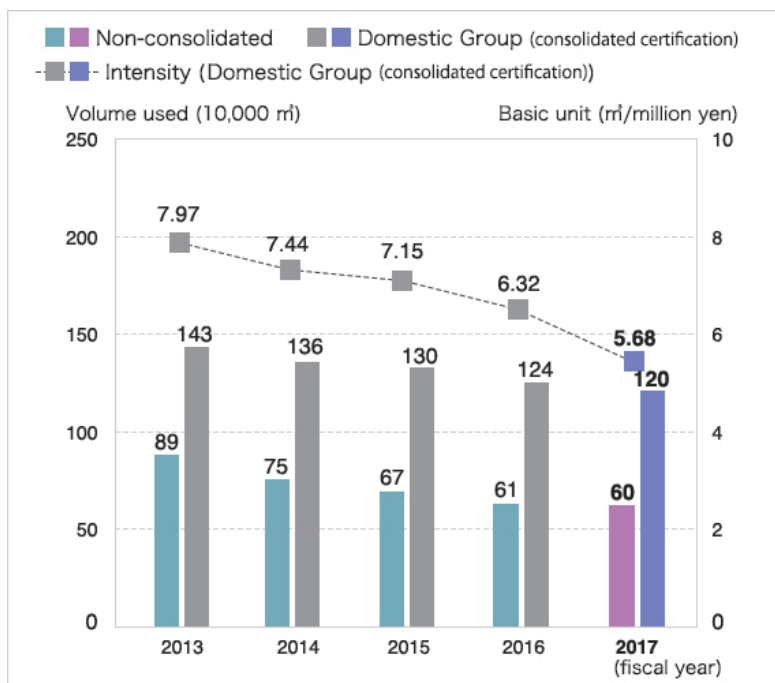
Trends in Volume of Waste Generated
(domestic group [consolidated certification])



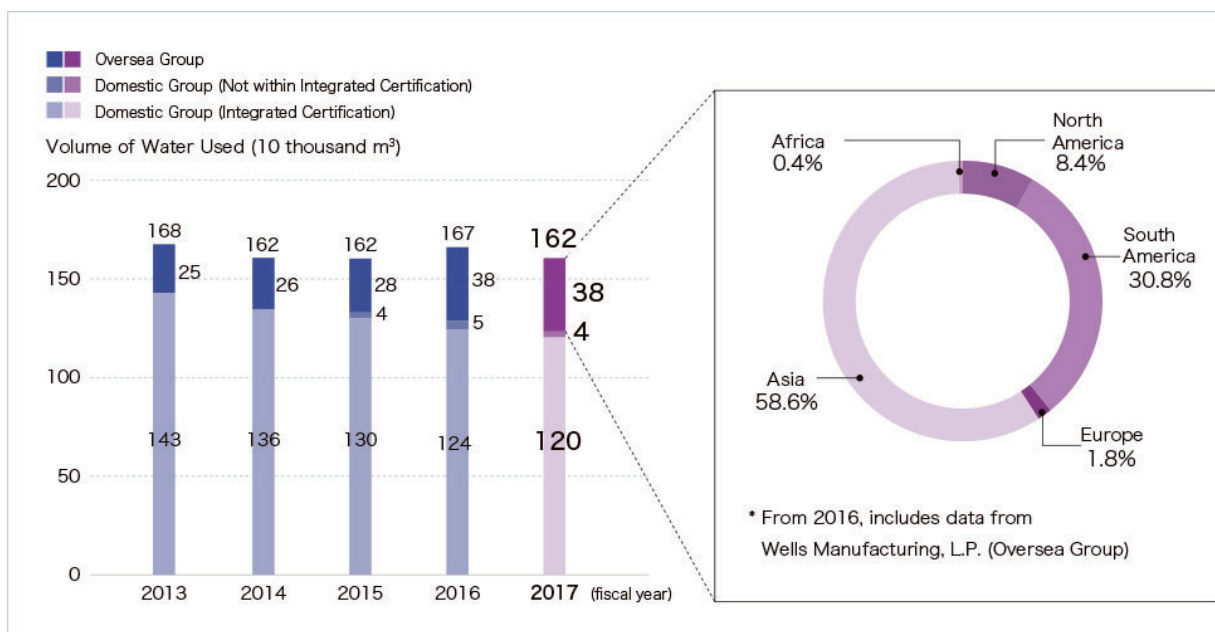
Trends in Volume of Waste Generated (group)

Reducing the Amounts of Tap and Well Water Used

In fiscal 2017, our water usage basic unit was 5.68 m³/million yen. Water usage basic unit was improved by 10% compared with fiscal 2015, which resulted from conserving water by renovating factories.



Trend in Volume of Tap Water/Well Water (Domestic group [consolidated certification])



Trend in Volume of Tap Water/Well Water (Domestic group [consolidated certification])

Environmental Communication

Basic Philosophy

It is essential for the NGK SPARK PLUG's GROUP to realize close coordination with local communities and become highly reliable for continuous business operations. For achievement of the goal, sharing information on the Group's environmental activities is regarded as the best approach. We have been endeavoring to disclose information and improve communication in an accurate and easy-to-understand way.

Plant Tours

On plant tours which our group company planned, you can observe our environmental efforts and facilities.

A deeper understanding of our Group's activities and better communication are achieved by listening to the comments and seeing our facilities and engaging in question and answer sessions. In fiscal 2017, we hosted 14 tours and welcomed 1,445 visitors at our plants.

Environmental Meeting

We host environmental meetings with local residents as a venue for communication. At these meetings, we explain our daily environmental activities as well as hear opinions and comments from participants on how we can further improve things. In fiscal 2017, we hosted 9 such meetings, with a total of 252 participants

Local Clean-up Activities

We regularly hold clean-up activities in the areas near the offices to preserve the local environment. We also continue to participate in beautifying activities hosted by local municipalities, etc. In fiscal 2017, a total of 525 people participated in such activities.



Clean-up activities (Komaki)



Clean-up activities
(Main Plant, Spark Tec WKS CO., LTD.)

Conservation of Biodiversity

NGK SPARK PLUG's GROUP defines preservation of biodiversity that has become increasingly important around the world as one of our environmental themes as essential as global warming control and recycling of resources.

In April 2013, we established the NGK SPARK PLUG Group Biodiversity Action Guidelines which indicate our policy and action plan regarding biodiversity.

Based on the guidelines, recognizing that activities such as the use of energy and resources have an effect on biodiversity, we will work in cooperation with business partners and external organizations to reduce the impacts of our entire business activities

System for Environmental Commendations

Based on our target to "Improve Environment Consciousness" set under the Global Eco Vision 2020, we have established an environmental commendation system for the NGK SPARK PLUG's GROUP to commend outstanding environmental initiatives.

The environmental commendation system was launched in 2014 aimed at environmental activities and initiatives in all divisions and departments of the company groups. The outstanding case will be commended by the President during meetings of the Central Environmental Committee.

In fiscal 2017, the fourth year of the system, commendations were given to 6 cases with respect to, for example, reduced CO2 emissions during production by improving productivity and quality along with reviewing the production plans, prevented water pollution from industrial waste water.

Third – Party Review

We have edited CSR Report 2018 to serve as an easily understood and trustworthy report, on the basis of information disclosure policies. So that we may hear objective opinions with the aim of creating a better report, we requested a third-party review from Mr. Tomohiro Tokura of SGS Japan Inc.

Third-Party Review of CSR Report 2018

We have heard of the steps that you have taken to promote BCM (Business Continuity Management) and prevent corruption (especially bribery) as a top priority for responding to potential risks as a group. We confirmed that it was a decision based upon risk assessment considering the impact on the management and transition of the social trends at CSR committee in organizations and as a result of proper procedures which manage the social responsibilities of organizations.

Even though what we heard on these processes was clear, it would be more reliable if details of risk assessment execution and its schedule were included, in addition to the evaluation and standards managed by the organization and how they were illustrated in the report. Also, promoting

BCM and preventing corruption which are designated in the report are related to social responsibilities of the organizations in various ways; for example,, lack of human resources has a negative impact on any business continuity, and if we cannot afford to have personnel resources or provide education, corruption will be inevitable.

To maintain suppliers and establish mutually beneficial relationships with them also relates to social responsibility. It is important to give continuous reports on the same social subjects in terms of possibilities and comparisons, but we believe there is room for consideration of reporting prioritized risk handling statuses in related issue reports while keeping those possibilities and comparisons.



Mr. Tomohiro Tokura
Chief Inspector Sustainability Service
Division
SGS Japan Inc.

We checked the implementation of disaster prevention drills for the BCM promotion report and confirmed that it was conducted on the same day including domestic groups. In this drill, collaborative training between offices for unexpected catastrophes was conducted and we believe it was effective. This deserves special mention as we were able to mobilize everyone unison. We have also confirmed that you have signed the United Nation Global Compact(UNGC) in November 2016, showing that you committed yourself to fulfill social responsibilities outside the organization. Not only outside the organization, but continuous training in order to promote CSR inside the organization has been conducted as well. Furthermore, the fact that these initiatives are stretching out into domestic group companies is noteworthy. We believe that it should be the first priority for each and every employee to have more awareness for his/her social responsibility as part of the organization. It is always people who fulfill social responsibilities of the organization and how it's done that depends on the way people think and act. These CSR activities don't have immediate effects and cannot be achieved by just one-time implementation. However, we affirmed that new advanced courses for CSR training were introduced and we expect that this will expand to the whole supply chain by continued activities from now on.

In the CSR report, non-financial disclosures relating to social responsibilities of the organization were provided, but financial aspects of non-financial disclosures were not reported. We assume there are some ways to disclose the information to the stakeholders.

While the demand on organizations from society is increasing every year due to disclosure from CDP in regards to information on greenhouse gas emission and water stress, we have heard your company fulfilled their demand by disclosing information appropriately and took it as your benchmark. Your company also began external verification of the amount of greenhouse gas emissions to enhance transparency. We hope to see continued implementation and further expansion of this external verification.

* This comment renders no judgment on whether the data presented in the report is accurately measured and calculated and is free from omissions, in accordance with standards for the preparation of environmental and other reports generally deemed to be fair and reasonable.

Targets and Results of CSR Promotion Activities

Evaluation standards ○ : Achieved the target ○ : Achieved more than 80% of the target × : Achieved less than 80% of the target

Field of Activities		SDGs Field-Specific Logos	Mid-term Targets (by fiscal 2020)	Fiscal 2017 Targets	Fiscal 2017 Achievement	Evaluation	Fiscal 2017 Targets	Fiscal 2018 Targets	Department in Charge
Management	Company-wide CSR Management		Implement PDCA cycle to promote CSR on a global basis	- Implementation of the PDCA to promote CSR at domestic and overseas group companies - Review of CSR policy	- Conducted survey on activities for 2017 and set the target for 2018 - Illustrated SDG comparison for CSR target	○	- Implementation of the PDCA to promote CSR at domestic and overseas group companies - Review of CSR policy	- Implement PDCA to promote CSR at domestic and overseas group companies - Review CSR policy	Risk Management Dept.
			Promote CSR awareness-raising activities on a global basis	Preparation of new training programs as the next step of CSR elementary training course	Implemented advanced training trial course for trainees who finished elementary CSR training course.	○	Preparation of new training programs as the next step of CSR elementary training course	Implement an advanced training course	Risk Management Dept.
	Company-wide Promotion System		Construct a global promotion system	- Establishment of rules for all the group companies - Preparation of trainings and guidelines regarding risk of bribery of foreign public officials	- Established rules for domestic and some of overseas group companies - Conducted in-house training regarding risk of bribery at overseas group companies	○	- Establishment of rules for all the group companies - Preparation of trainings and guidelines regarding risk of bribery of foreign public officials	Establish rules for all the group companies	Compliance Committee
			Continue education on helpline content	- Awareness raising through Corporate ethics help line cards and posters - Making internal report system available to suppliers	- Distributed corporate ethics help line cards and posters to raise awareness - Began operating internal report system for suppliers	○	- Awareness raising through Corporate ethics help line cards and posters - Making internal report system available to suppliers	- Continue illustrating our corporate ethics with posters to raise awareness and compliance newsletter - Continue educating suppliers about our corporate ethics	Compliance Committee
			Continue compliance awareness and knowledge training	- Expansion of the target range of participants for Compliance seminar - Continuous issue of the Compliance Newsletter - Revision of Compliance guide book	- Held compliance seminar for expanding the target range of participants (about 1200 people participated) - Issued ten compliance newsletters - Issued second compliance guide book	○	- Expansion of the target range of participants for Compliance seminar - Continuous issue of the Compliance Newsletter - Revision of Compliance guide book	- Hold multi-level compliance seminars - Continue issuing compliance newsletter	Compliance Committee
			Continue monitoring of compliance awareness and knowledge and corporate culture change	Conducting compliance survey	Conducted compliance survey and gave feedback for analysis results	○	Conducting compliance survey	Continue conducting compliance surveys	Compliance Committee
	Security Control		Deploy educational tools to NGK SPARK PLUG and group companies in Japan and monitor implementation status and effectiveness	Careful examination on e-learning contents, and monitor on operational situation and effectiveness	Implemented in-house expansion of e-learning content	○	Careful examination on e-learning contents, and monitor on operational situation and effectiveness	Establish operation rules and improve e-learning content	Confidentiality Management Committee
			Continuously improve security control, including group companies, and establish system for surveillance of implementation status	- Domestic group companies: Continuous tracking of group companies engaging in direct export - Overseas group companies: Execute awareness-raising activities in accordance with the risk of each company	- Added the checklists regarding privacy policy and conducted regular inspections (for domestic group companies) - Prepared for upcoming EU GDPR implementation in May, 2018 for the NGK SPARK PLUG Group	○	- Domestic group companies: Continuous tracking of group companies engaging in direct export - Overseas group companies: Execute awareness-raising activities in accordance with the risk of each company	- Solidify personal data handling including GDPR-compliance and promote awareness activities - Promote regulation formulation for group companies along with group information security law.	Confidentiality Management Committee
	Export Control		Establish a system for surveillance of implementation status of appropriate export controls, including group companies	- Domestic group companies: Continuous tracking of group companies engaging in direct export - Overseas group companies: Execute awareness-raising activities in accordance with the risk of each company	- Provided education to and made inspections of domestic group companies engaging in direct export - Checked export statuses from overseas companies and discussed how to handle various risks	○	- Domestic group companies: Continuous tracking of group companies engaging in direct export - Overseas group companies: Execute awareness-raising activities in accordance with the risk of each company	- Continue confirming export management status of domestic group companies engaging in direct exports - Continue awareness activities for overseas group companies in accordance to risks	Export Control Committee
			Continuously reduce security risk of group companies through deployment of Group Information Security Regulations	- Domestic group companies: Completion of countermeasure - Overseas group companies: Countermeasure completed by 60% of group companies	- Domestic group companies: Completed 40% of countermeasures - Overseas group companies: Completed 10% of countermeasures	×	- Domestic group companies: Completion of countermeasure - Overseas group companies: Countermeasure completed by 60% of group companies	- Domestic group companies: Completing countermeasures, regulations and standards - Overseas group companies: Completing countermeasures, regulations and standards	Information Systems Dept.
	Respect for and Protection of Intellectual Property Rights	 	Implement patent review activities for mainstay products prior to design review meeting, including group companies	- Continuous implementation of patent reviews - Identification of noteworthy patents, and progress management of counterproposals	- Implemented continuous patent review - Implemented identification of noteworthy patents and formulated counterproposals	○	- Continuous implementation of patent reviews - Identification of noteworthy patents, and progress management of counterproposals	- Continue implementing patent reviews - Implement identification of noteworthy patents and manage formulation of counterproposal progress	Intellectual Property Dept.
			Establish new methods to deal with increasingly sophisticated counterfeiters, particularly in emerging countries	- Being aware of current status of counterfeit products distributed by online retailers in the electronic commerce, and formulation of control method - Implementation of counterfeit product countermeasures in emerging countries not yet addressed	- Implemented measures against counterfeit products distributed by online retailers in the United States and Australia - Joined IIPPF regarding countermeasures towards counterfeit products in the Middle East	○	- Being aware of current status of counterfeit products distributed by online retailers in the electronic commerce, and formulation of control method - Implementation of counterfeit product countermeasures in emerging countries not yet addressed	- Strengthen monitoring system for e-commerce in China - Revitalize onsite activities against counterfeit product distribution in ASEAN	Intellectual Property Dept.
			Have at least 15% of submitted patents be differentiation patents utilizing a patent portfolio that adds rivals' information	- Preparation of balance sheet of key product - Identification of patents relating to the respective technical fields, and collection of database information with excellent visualization capability	- Began and continued balance sheet of key products. - Collected database information.	×	- Preparation of balance sheet of key product - Identification of patents relating to the respective technical fields, and collection of database information with excellent visualization capability	- Continue making key product balance sheet - Identify patents in classified technology fields and collect database information which visualize them	Intellectual Property Dept.
			Involve trademark aspects in strengthening our brand organization	Establishment of corporate brand in collaboration with relevant internal divisions/organizations, and support for improving the value	Revised V.I. manual reflecting changes in products and modifications of our group companies	○	Establishment of corporate brand in collaboration with relevant internal divisions/organizations, and support for improving the value	- Review license usage of logos that improve the value of our corporate brand - Review our trademark manual in accordance with RHQ system	Intellectual Property Dept.
			Enhance intellectual property education, including group companies	Holding Intellectual Property training for employees including those working for group companies	- Held training session regarding surveys for beginner, intermediate, and advanced levels - Held training session for outside companies	○	Holding Intellectual Property training for employees including those working for group companies	Conduct intellectual property education including employees at group companies	Intellectual Property Dept.

Targets and Results of CSR Promotion Activities

Evaluation standards ○: Achieved the target ○: Achieved more than 80% of the target ×: Achieved less than 80% of the target

Field of Activities			SDGs Field-Specific Logos	Mid-term Targets (by fiscal 2020)	Fiscal 2017 Targets	Fiscal 2017 Achievement	Evaluation	Fiscal 2017 Targets	Fiscal 2018 Targets	Department in Charge
Management	Risk Managemen t	BCP/BCM		Expand business continuity management system to group companies in Japan	•Conducting training in collaboration among BCP departments	• Conducted BCP drills for individual departments and collaboration between departments.	○	•Conducting training in collaboration among BCP departments	• Continue BCP collaborative drills	BCM Working Group
				Construct a management system that can respond to not only earthquakes but also other disasters		• Issued BCP guidelines for new strains of influenza, etc			• Formulate BCP guidelines for new strains of influenza, etc	
				Construct a procurement BCP framework and expand and operate it at group companies	•Expanding covered items for procurement BCP in our company •Deployment to planned group company	• Expanded covered items for procurement BCP to one of our departments • Deployed to planned group companies (deployment postponed for a subsection of group companies)	○	•Expanding covered items for procurement BCP in our company •Deployment to planned group company	• Operate and improve our procurement BCP continuously • Deploy to planned group	Procurement Div.
				IT-BCP countermeasures for server infrastructure (cloud utilization)	Enhancement of in-house cloud environment for conducting file server transition	• Delayed enhancement of in-house cloud environment	×	Enhancement of in-house cloud environment for conducting file server transition	• Establish integrated file server environment and transfer files sequentially starting fiscal 2019	Information Systems Dept.
		Company-wide Risk Management		Build company-wide risk management suited to NGK SPARK PLUG	•Establishment of risk management rules for overseas group companies •Promotion of activities for coping with risks with priority unified in the group Risk to be coped with priority unified in the group in fiscal 2017 ①Promotion of BCM (Business Continuity Plan) ②Corruption prevention	• Checked draft for provisions and confirmed it is possible to be regulated. • Implemented management reviews at CSR committee	○	•Establishment of risk management rules for overseas group companies •Promotion of activities for coping with risks with priority unified in the group Risk to be coped with priority unified in the group in fiscal 2017 ①Promotion of BCM (Business Continuity Plan) ②Corruption prevention	• Overseas group companies: Start operating risk management system • Domestic group companies: Continue operating risk management system • Fulfill action plan for fiscal 218	Risk Management Working Group
With Our Customers	Safety and Quality			Expand quality assurance to all group companies with a focus on goods for all customers	•Formulation of company-wide QMS structure •Improving upstream process analysis capability from customer complaints •Enhancing measurement control systems of overseas group companies	•Issued manuals based on IATF (International Automobile Task Force) and conducted internal audit • Confirmed that event and upstream analysis capability can prevent recurrence of customer complaints • Conducted onsite audit. Provided technical support for correction. Completed developing certification program for calibration for overseas group companies.	○	•Formulation of company-wide QMS structure •Improving upstream process analysis capability from customer complaints •Enhancing measurement control systems of overseas group companies	• Upgrade QMS structure • Stipulate steps for preventing recurrence of customer complaints in related divisions and provide it to all divisions • Confirm control plan standard on site and verify the cause to prevent recurrence	Quality Committee, Corporate Quality Management Div.
				Expand quality management to all group companies aimed at delivering value to all customers	•Establishment of education system of quality-related rules and regulations •Efficient use of personnel with professional skills of quality control	•Created and issued educational materials in accordance with the survey result done with managerial employees. • Increased QC 3rd grade holders and QCC instructors.	○	•Establishment of education system of quality-related rules and regulations •Efficient use of personnel with professional skills of quality control	• Disclose and familiarize regulations relating to quality control. • Establish system for utilizing abilities of QC certification holders and QCC instructors.	Quality Committee, Corporate Quality Management Div.
With Our Shareholders and Investors	Information Disclosure			Disseminate information that leads to increased shareholder trust	Enhancement and expansion of communication with stakeholders	• Hold sensor technology seminar • The number of conversations held with institutional investors and securities companies: 378	○	Enhancement and expansion of communication with stakeholders	• Strengthen our relations with individual and institutional investors	Public Relations Dept.
				Disseminate information in an easy-to-understand and approachable manner on a global level	Enhancement of CSR website	•Updated CSR website	○	Enhancement of CSR website	• Improve CSR website • Optimize company evaluation of CSR survey and SRI survey	Risk Management Dept.
				Construct framework for an IR strategy aimed at institutional investors	Optimizing quick report and comprehensiveness of various disclosed documents	• Maintained quick reporting using various information	○	Optimizing quick report and comprehensiveness of various disclosed documents	• Disclose more information such as business risks qualitatively	Accounting & Finance Dept.
				Disseminate information that captures stakeholders' expectations and the changes in social trends	Disseminating information that captures stakeholders' expectations and the change in social trends	• Promoted Global Compact internally. • Confirmed the relevance between SDGs and CSR targets. • Strengthened relations with ESG institutional investors.	○	Disseminating information that captures stakeholders' expectations and the change in social trends	• Disseminate information including the expectations of stakeholders and the change of social trends	Risk Management Dept.

Targets and Results of CSR Promotion Activities

Evaluation standards ○ : Achieved the target ○ : Achieved more than 80% of the target × : Achieved less than 80% of the target

Field of Activities	SDGs Field-Specific Logos	Mid-term Targets (by fiscal 2020)	Fiscal 2017 Targets	Fiscal 2017 Achievement	Evaluation	Fiscal 2017 Targets	Fiscal 2018 Targets	Department in Charge
With Our Employees		Implement fair evaluations that correspond to clear expectations	Promotion of personnel system reform • Entrenchment of system in companies where it has been introduced • Preparation for expansion of system into group companies in Japan • Determination of the direction of companies where the new system has not been introduced	• Launched Core Position Project (appropriate place, appropriate people) and dispatch appropriate personnel assets to appropriate places. Continued support for the group companies where it has been introduced. • Completed preparation for expansion and started operating in April as it was planned • Decided not to introduce part of the system to the companies where the system has not been introduced.	○	Promotion of personnel system reform • Entrenchment of system in companies where it has been introduced • Preparation for expansion of system into group companies in Japan • Determination of the direction of companies where the new system has not been introduced	• Understand and nurture basic abilities of employees • Support domestic group companies after introducing personnel system • Review personnel system taking into account management strategies and designing thinking	Strategic Human Resources Dept.
		Establish educational programs that target the leaders of each group company	Formulating the policy of introducing education programs in domestic group companies, and forming consensus	• Agreed on setting training programs with domestic group companies.	○	Formulating the policy of introducing education programs in domestic group companies, and forming consensus	• Implement classified training for leaders	Strategic Human Resources Dept.
		Employ diverse human resources strategically	Constructing the mechanism for hiring diverse human resources	• Clarified problems when hiring diverse human resources in April 2018	○	Constructing the mechanism for hiring diverse human resources	• Implement recruitment of diverse personnel assets for April 2019	Strategic Human Resources Dept.
		Achieve personnel and human resource functions that contribute to the promotion of management strategy	Implementation of program for developing global management human resources	• Conducted human resource nurturing program. Program for managerial employees: First program for managers was completed. First program for section chiefs started.	○	Implementation of program for developing global management human resources	• Implement global management human resource nurturing program	Strategic Human Resources Dept.
		Further encourage the promotion of active participation by women	•Clarifying problems from progress report on the action plan in the respective departments, and results of hearings from female members •Holding the diversity management training course for every chief official in addition to lectures for those on major career path, and gathering for female employees held on regular basis	• Conducted hearings with female members and clarified problems Continued individual support for departments with issues. • Held seminars for those on a career track and gathering for female employees on regular basis	○	•Clarifying problems from progress report on the action plan in the respective departments, and results of hearings from female members •Holding the diversity management training course for every chief official in addition to lectures for those on major career path, and gathering for female employees held on regular basis	• Implement training programs and consultation for female members continuously and promote women's empowerment • Hold seminars for key employees on regular basis	Strategic Human Resources Dept.
		Zero workers leaving their jobs in order to provide nursing care	Holding the training program for the purpose of avoiding leaving of employees due to nursing care	• Conducted seminar for balancing work and nursing care	○	Holding the training program for the purpose of avoiding leaving of employees due to nursing care	• Conduct seminar for balancing work and nursing care	Strategic Human Resources Dept.
		Achieve the mandatory number for employment of people with disabilities	Putting the special subsidiary company on the path of growth	• Gained certification as a special subsidiary company for Nittoku Smile Co., Ltd.	○	Putting the special subsidiary company on the path of growth	• Hire more people with disabilities at our special subsidiary, Nittoku Smile Co.,Ltd.	Strategic Human Resources Dept.
		Promote active participation by seniors	Improving motivations of employees in late fifties or older	• Conducted hearings with senior employees and started understanding the reality of their working environment.	○	Improving motivations of employees in late fifties or older	• Start project for promoting senior employees work and clarify problems	Strategic Human Resources Dept.
		Raise productivity by decreasing the rate of onset of mental illness	Taking countermeasure for reforming the division marked as higher stress level as a result of stress checking	• Conducted activities for improving the divisions marked as higher stress at the factory at headquarters and the Komaki factory.	○	Taking countermeasure for reforming the division marked as higher stress level as a result of stress checking	• Promote activities for improving working environment by utilizing stress check group analysis • Conduct and evaluate health management measures	Personnel and Labor Relations
		Develop systems that make it difficult for accidents to occur aimed at developing a global safety culture	• Elimination of work-related accidents • Improvement of work environments • Promotion of health improvement • Enhancement of education, training, and awareness	• Promoted elimination of work-related accidents at each office and Health and Safety Committee. • Conducted work environment measurement and took measures according to the results • Held health improvement seminar and mental health training program • Conducted information dissemination for awareness, confirmation of safety and health committee, and onsite instruction at offices	○	• Elimination of work-related accidents • Improvement of work environments • Promotion of health improvement • Enhancement of education, training, and awareness	• Eliminate work-related accidents • Improve working environment • Promote Health • Improve education, training, and awareness	Safety and Health Committee
			• Global development of safety and health activities • Preparation of tool used for safety and health activities overseas • Review on safety and health management system in workplace • Establishment of system offering the training for employees expected to be transferred overseas	• Confirmed work progress and held QA session based on the plan • Made "handbook" on safety observation and risk prediction before work (on-the-spot risk prediction) and provided to overseas companies after translating. • Formulated rules (details) with the lists of things which all group companies must conduct. • Made the training before transferred to overseas mandatory. Will be operated fully starting next term.	○	• Global development of safety and health activities • Preparation of tool used for safety and health activities overseas • Review on safety and health management system in workplace • Establishment of system offering the training for employees expected to be transferred overseas	• Promote global safety and health activities	Environment & Safety Management Dept.

Targets and Results of CSR Promotion Activities

Evaluation standards ○ : Achieved the target ○ : Achieved more than 80% of the target × : Achieved less than 80% of the target

Field of Activities	SDGs Field-Specific Logos	Mid-term Targets (by fiscal 2020)	Fiscal 2017 Targets	Fiscal 2017 Achievement	Evaluation	Fiscal 2017 Targets	Fiscal 2018 Targets	Department in Charge
With Our Suppliers		Improve the framework for evaluation aimed at global optimum procurement and deploy and operate at group companies	- Improvement of evaluation at NGK SPARK PLUG - Expansion to planned Group companies	- Improved evaluation content - Completed aligning standard at the planned group companies.	○	- Improvement of evaluation at NGK SPARK PLUG - Expansion to planned Group companies	- Expand evaluation to the planned group companies - Continue and improve evaluation	Procurement Div.
		Reduce risk in the supply chain by thoroughly establishing CSR procurement	- Communication at corporate policy conference - Summarizing idea of risk reduction, and start activities - Conduct risk assessment in the planned group companies	- Presented at corporate policy conference - Planned risk reduction and started activities - Completed risk assessment in the planned group companies.	○	- Communication at corporate policy conference - Summarizing idea of risk reduction, and start activities - Conduct risk assessment in the planned group companies	- Present at corporate policy conference - Make education tools for the procurement division - Expand risk assessment for planned group companies and conduct risk reduction activity operations	Procurement Div., Risk Management Dept.
With Local Communities and International Society		Continually enhance the social status of the NGK SPARK PLUG Group through social contribution activities	Planning and implementing sustainable social contribution activities unique to NGK SPARK PLUG	- Planned and produced musical with Shiki Theater Company. - Held one day science school with JAXA supported by the Komaki educational board	○	Planning and implementing sustainable social contribution activities unique to NGK SPARK PLUG	Organize and upgrade social contribution activities	Public Relations Dept.
For Environmental Protection		Promote environmental activities aimed at achieving global Eco Vision	Global warming - CO2 in production: Reduce emissions per unit of production by 1% from fiscal 2015 - CO2 in physical distribution: Promote efficient distribution	Global warming - CO2 in production: Reduced production emissions per unit by 7.3 % from fiscal 2016 - CO2 in physical distribution: Optimized distribution activities	○	Global warming - CO2 in production: Reduce emissions per unit of production by 1% from fiscal 2015 - CO2 in physical distribution: Promote efficient distribution	Global warming - CO2 in production: Reduce emissions per unit of production by 11 % from fiscal 2015 - CO2 in physical distribution: Promote efficient distribution	Environmental Committee
			Depletion of resources - Promotion of waste reduction by decreasing defective products - Promotion of product design considering suppression of generated waste quantity - Promotion of efficient use of water	Depletion of resources - Decreased waste by improving production structure and reduced defective products - Reduced water usage by modifying businesses, renovating equipment, and reviewing operation	○	Depletion of resources - Promotion of waste reduction by decreasing defective products - Promotion of product design considering suppression of generated waste quantity - Promotion of efficient use of water	Depletion of resources - Promote waste reduction by decreasing defective products - Promote product design considering suppression of generated waste quantity - Promote efficient use of water - Promote product design considering suppression of water usage	Environmental Committee
			Hazardous chemical substances - Promoting substitution of substances of environmental concern ahead of regulations - Formulating a substitution plan for HCPC targeted equipment	Hazardous chemical substances - Shared information about regulations by chemical substance management committee and conducted regulations - Implemented substitution for phthalic acid subject to banning by the RoHS in 2019. - Implemented planned renewal for air conditioners with HCFC-22	○	Hazardous chemical substances - Promoting substitution of substances of environmental concern ahead of regulations - Formulating a substitution plan for HCPC targeted equipment	Hazardous chemical substances - Respond to regulations including ELV, RoHS, REACH - Implement a substitution plan for HCPC targeted equipment	Environmental Committee
			Environmentally-friendly products Strengthening development and design activities that contribute to saving energy	Environmentally-friendly products Implemented integration of environmentally-friendly products	○	Environmentally-friendly products Strengthening development and design activities that contribute to saving energy	Environmentally-friendly products Expand environmentally-friendly products	Environmental Committee
			Promoting integration of business activities and environmental activities	- Studied EMS activity status in domestic and overseas group companies, and supported them in accordance with the level of their activities. - Completed expanding environmental handbook to both domestic and overseas companies. Made environmental glossary available globally	○	Promoting integration of business activities and environmental activities	Promote integration of business activities and environmental activities Improve in global terms	Environment & Safety Management Dept.

*We eliminated one of our field activities, "Promoting education and awareness to reduce risks by utilizing seminars for our suppliers" which is our mid term goal of our CSR procurement since we have completed our initiatives in fiscal 2016.

ISO 14001 Certified Locations

Certification covering multiple units (Scope of applicability)

Country	Name of factories and companies		Certified initially in:
Japan	NGK SPARK PLUG CO., LTD.	Headquarters and Nagoya Plant	'99. 8
		Komaki Plant, Miyanojo Plant, Ise Plant	'00. 12
		Takenami Plant	'07. 1
		Inuyama Logistics Center	'99. 8
	NITTOKU ALPHA SERVICE CO., LTD.		'99. 8
	NITTOKU UNYU CO., LTD.		'00. 12
	CERAMIC SENSOR CO., LTD.		'00. 12
	NTK CERAMIC CO., LTD.	Komaki Plant	'00. 12
		Iijima Plant, Kani Plant	'02. 12
	CERAMIC SENSOR NAKATSUGAWA CO., LTD.		'16. 12
	NANSEI CERAMIC CO., LTD.		'02. 12
	KAMIOKA CERAMIC CO., LTD.		'04. 1
	SparkTec WKS CO., LTD.	Head Office Plant, Oguchi Plant	'04. 1
		Satsuma Plant	'09. 12
	NICHIIWA KIKI CO., LTD.		'04. 1
	SparkTec TONO CO., LTD.	Tono Plant	'04. 1
		Nino Headquarters Plant	'15. 12

Certification obtained individually

Country	Name of factories and companies		Certified initially in:
Japan	NTK CERATEC CO., LTD.		'04. 10
	NGK SPARK PLUGS (U.S.A.), INC.	WV Plant	'00. 7
	WELLS VEHICLE ELECTRONICS, L.P.		'03. 3
Mexico	BUJIAS NGK DE MEXICO S.A. DE C.V.		'12. 11
Brazil	CERAMICA E VELAS DE IGNICAO NGK DO BRASIL LTDA.		'01. 12
France	NGK SPARK PLUGS (FRANCE) S.A.S.		'00. 5
U.K.	NGK SPARK PLUGS (UK) LTD.		'01. 12
Germany	NGK SPARK PLUG EUROPE GmbH		'04. 11
Thailand	SIAM NGK SPARK PLUG CO., LTD.		'02. 11
	NGK SPARK PLUGS (THAILAND) CO., LTD.		'12. 10
	NGK SPARK PLUGS (ASIA) CO., LTD.		'16. 10
South Korea	WOOJIN INDUSTRY CO., LTD.		'05. 4
	NTK TECHNICAL CERAMICS KOREA CO., LTD.		'06. 4
Malaysia	NGK SPARK PLUGS MALAYSIA BERHAD		'06. 3
China	NGK SPARK PLUG [SHANGHAI] CO., LTD.		'07. 4
	CHANGSHU NGK SPARK PLUG CO., LTD.		'13. 3
Indonesia	PT NGK BUSI INDONESIA		'07. 10
India	NGK SPARK PLUGS (INDIA) PVT. LTD.		'10. 12
South Africa	NGK SPARK PLUGS SA (PTY) LTD.		'08. 4

Environmental Accounting

Environmental Conservation Cost

(Unit: million yen)

Items			Non-consolidated				NGK SPARK PLUG Group			
Classification		Major efforts	Investment		Expense		Investment		Expense	
			2016	2017	2016	2017	2016	2017	2016	2017
Costs within the business area	Pollution prevention cost	Air/water pollution prevention and noise reduction	23	57	335	370	48	108	788	807
	Global environmental conservation cost	Global warming prevention, energy conservation	16	25	372	493	88	32	443	576
	Resource circulation cost	Effective resource utilization, industrial waste treatment/disposal	26	35	415	495	55	58	606	711
	Sub-total		65	117	1,122	1,358	190	198	1,836	2,085
Upstream & downstream cost		Employee environmental education, EMS construction and operation	0	0	0	1	0	0	9	9
Management activity cost		Employee environmental education, EMS construction and operation	12	12	879	899	18	19	938	961
R&D cost		R&D of products promoting environment preservation	1,562	1,331	9,445	10,272	1,562	1,331	9,445	10,272
Social activity cost		Nature protection, afforestation, environmental ads	0	0	310	277	1	0	316	283
Environment damage correction cost		Repair of soil contamination, disrupted nature	0	0	10	9	0	0	10	9
Other costs		—	0	0	4	5	0	0	4	5
Total			1,640	1,460	11,770	12,821	1,772	1,548	12,559	13,624

* Any inconsistency between an aggregate of all itemized figures and a "Total" figure is due to rounding of fractions.

Economic Benefits Associated with Environmental Conservation Activities (non-consolidated)

(Unit: million yen)

Area of recognized effect		2016	2017
Revenue	Revenue generated from the recycling of waste generated in operations or used products	99	134
Cost saving	Energy cost saving achieved from energy conservation efforts	17	104
	Reduction of water expenses through water saving	0.41	5.00
	Waste disposal cost saving achieved by resource conservation and recycling efforts	1.6	12.0
Total		118	255

Quantity of Environmental Conservation Benefits

Classification			Non-consolidated			NGK SPARK PLUG Group		
Effect measured in the business area	Types of effect		2016	2017	Difference from the previous fiscal year	2016	2017	Difference from the previous fiscal year
Effect measured with respect to resource input into operations	Energy consumption	Purchased electricity (GWh)	17,388	16,187	-1,201	33,910	34,572	662
		Gas (million m ³)	699	560	-139	1,175	1,099	-76
		LPG (million m ³)	3,688	3,752	65	7,181	7,139	-42
	Water consumption	Tap water (m ³)	314,010	327,267	13,257	706,115	724,866	18,750
		Well water (m ³)	293,768	277,575	-16,193	535,419	470,239	-65,180
	Quantity of PRTR law-regulated substances handled (tons)		599	587	-12	856	863	6
Effect measured with respect to environmental load and waste from business activities	CO ₂ emission from energy consumption (tons)		129,197	118,398	-10,798	246,299	248,123	1,824
	Waste	Effectively utilized mass (tons)	6,672	6,058	-614	11,944	10,687	-1,257
		Buried, incineration (tons)	24	28	4	49	270	221
	PRTR law-regulated substances released into air and water (tons)		2.5	1.9	-1	141	138	-3

* Transport energy data and sales office data is not included.

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-Miyanojyo 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, Kandasudacho, Chiyoda-ku, Tokyo, Japan

August 7, 2018