

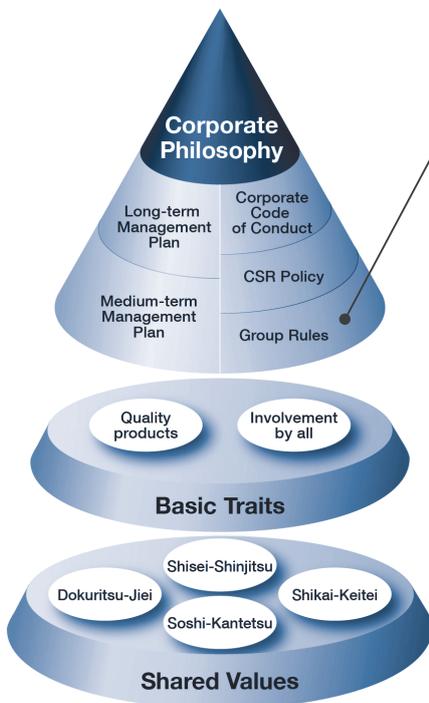
# ***IGNITE YOUR SPIRIT***

NGK SPARK PLUG CO., LTD.

Sustainability Data Book **2019**

## Our CSR

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.



- Risk Management Policy
- Compliance Policy
- Information Security Policy
- Corporate Quality Policy
- Information Disclosure Policy
- Procurement Policy
- Human Resource Policy
- Occupational Safety and Health Basic Policy
- Social Contribution Policy
- Environmental Policy

### CSR promotion system



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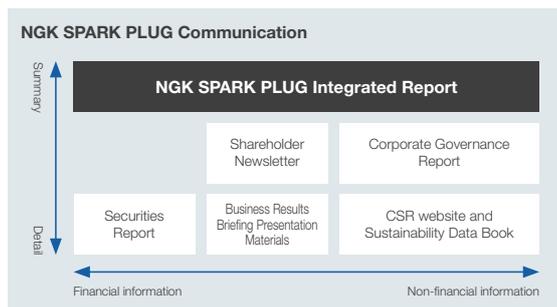
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### Editorial policy

In this Sustainability Data Book, we mainly include the information (numerical data) that attracts institutional investors and research organizations from among non-financial information provided in our Integration Report and CSR website.

For details about our CSR activities, please refer to our CSR website:

<https://www.ngkntk.co.jp/english/csr/>

### Period covered

Fiscal year ended March 31, 2019

(From April 1, 2018 to March 31, 2019)

\*Unless otherwise indicated separately

### Organizations covered

Indicated separately

## Board of Directors and Board of Auditors

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.

The 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 at the Board of Directors.

	(fiscal year)	2014	2015	2016	2017	2018
<b>Directors</b>	Men (people)	10	9	9	9	9
	Women (people)	0	1	1	1	1
	Percentage of women (%)	0	10	10	10	10
	Outside directors (independent officers) (people)	2	3	3	3	3
	Percentage of outside directors (%)	20	30	30	30	30
<b>Auditors</b>	Men (people)	4	4	3	3	3
	Women (people)	0	0	1	1	1
	Percentage of women (%)	0	0	25	25	25
	Outside directors (independent officers)(people)	2	2	2	2	2
<b>Board of directors</b>	Frequency (times)	15	16	13	14	12
	Average attendance rate (%)	97.3	99.5	97.8	98.5	99.4
<b>Board of auditors</b>	Frequency (times)	13	14	13	14	13
	Average attendance rate (%)	98.1	98.2	94.2	96.4	100

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

## Nomination and Remuneration for Directors

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.

### Compensation for directors and auditors

Category of officers	Total amount of compensation (millions of yen)	Total amount by type (millions of yen)			Number of targeted officers
		Basic compensation	Bonus	Stock compensation	
Directors (excluding outside directors)	468	312	100	55	10
Auditors (excluding outside auditors)	50	50	—	—	2
Outside directors	43	43	—	—	3
Outside auditors	28	28	—	—	3

\*The amounts listed above include the amounts of compensation paid to three directors and one auditor who resigned following the end of the 118th Ordinary General Meeting of Shareholders (held on June 26, 2018).

\*The amount of compensation to be paid to directors has the following limits based on the resolution made at the 117th Ordinary General Meeting of Shareholders (held on June 29, 2017).

Total amount of compensation (excluding the total amount of bonuses): Up to 60 million yen a month

Total amount of bonuses: Up to 180 million yen a year

Also based on the resolution made at the 117th Ordinary General Meeting of Shareholders, performance-linked stock compensation of up to 1,000 million yen in total will be paid to directors and corporate officers over four fiscal years from April 1, 2017 to March 31, 2021.

The amount of compensation paid to auditors has the following limits based on the resolution made at the 106th Ordinary General Meeting of Shareholders (held on June 29, 2006):

Total amount of compensation (excluding total amount of bonuses): Up to 10 million yen a month

Total amount of bonuses: Up to 10 million yen a year

## Compliance

We have opened the “Corporate Ethics Helpline” as an in-house reporting system that encourages employees to consult regarding compliance. 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.

(fiscal year)	2014	2015	2016	2017	2018
Consultation requests/ reports made internally (cases)	25	50	54	65	73

[Scope of tabulation] NGK SPARK PLUG Group [Calculation method] Number of cases of consultation requests/reports received through the Corporate Ethics Helpline

## Political Donation

In order to maintain sound and normal relationships with the political circles, we ensure compliance with the Political Funds Control Act and will never make donations to individual politicians. In principle we will also make no donations to political parties and political fund-managing organizations.

(fiscal year)	2014	2015	2016	2017	2018
Political donations (cases)	0	0	0	0	0
Total amount (yen)	0	0	0	0	0

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

## R&D

By making use of optimal technologies and our past experiences, we are widely conducting R&D activities to propose new value to people across the world.

(fiscal year)	2014	2015	2016	2017	2018
R&D expenses (millions of yen)	—	23,123	23,416	25,283	28,071
Ratio of R&D expenses to sales (%)	—	6.03	6.28	6.17	6.60

[Calculation method] Annual R&D expenses including those for improving existing products and for applied research

### Basic Philosophy

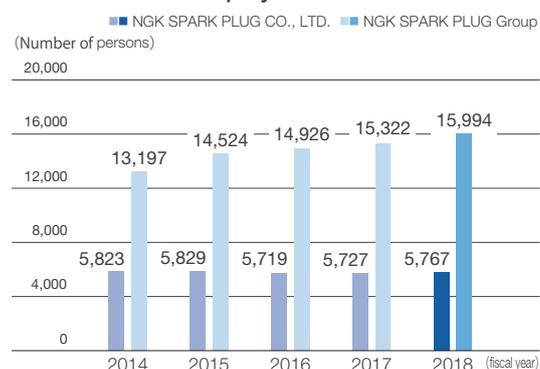
Human resources are the most important management resource. We promote the sustainable growth of the NGK SPARK PLUG Group by striving for human resources development that respects the diversity and individuality of our employees and by encouraging individual employees to reach their own full potential,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

#### Total number of employees

(fiscal year)	2014	2015	2016	2017	2018
NGK SPARK PLUG CO., LTD. (people)	5,823	5,829	5,719	5,727	5,767
NGK SPARK PLUG Group (people)	13,197	14,524	14,926	15,322	15,994

[Calculation method] NGK SPARK PLUG CO., LTD. : Regular employees as of March 31  
NGK SPARK PLUG Group : As of March 31

#### Total number of employees



#### Temporary employees

(fiscal year)	2014	2015	2016	2017	2018
Temporary employees (people)	—	313	346	303	505

[Scope of tabulation] NGK SPARK PLUG CO., LTD. [Calculation method] As of March 31

#### Status of employees

(fiscal year)	2014	2015	2016	2017	2018	
Average age	Men (aged)	38.3	38.4	38.6	38.6	39.0
	Women (aged)	35.5	35.5	35.9	35.9	36.9
	Total (aged)	37.8	37.9	38.2	38.2	38.6
No. of years of service	Men (years)	16.3	16.3	16.4	16.4	16.8
	Women (years)	14.8	14.9	15.2	15.2	16.1
	Total (years)	16.1	16.1	16.2	16.2	16.7
Average annual salary (yen)	6,440,671	6,607,006	6,767,466	6,681,684	6,912,014	
Turnover rate	Total employee turnover rate (%)	2.60	2.52	2.57	2.06	3.13
	Voluntary employee turnover rate (%)	1.46	1.09	1.08	1.42	1.83

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

[Calculation method] Average age/No. of years of service : Calculated based on the number of regular employees as of March 31

Total employee turnover rate : Calculated based on the number of employees who retired / quit the company

Voluntary employee turnover rate : Calculated based on the number of employees who quit the company for personal reasons

## Diversity

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.

	(fiscal year)	2014	2015	2016	2017	2018
Regular employees	Men (people)	4,906	4,909	4,822	4,699	4,730
	Women (people)	917	920	897	1,028	1,037
	Percentage of women (%)	15.7	15.8	15.7	18.0	18.0
Manager	Women (people)	6	8	10	12	15
	Percentage of women (%)	0.66	0.81	1.07	1.24	1.52
Supervisor	Women (people)	26	28	28	27	26
	Percentage of women (%)	2.68	2.81	2.68	2.49	2.28
Generalist (Classified, Considered)	Percentage of women (%)	4.91	5.54	5.87	6.68	7.20
Percentage of disabled employees (%)		1.80	1.82	1.90	2.17	2.21
Reemployed (people)		228	229	251	223	204

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

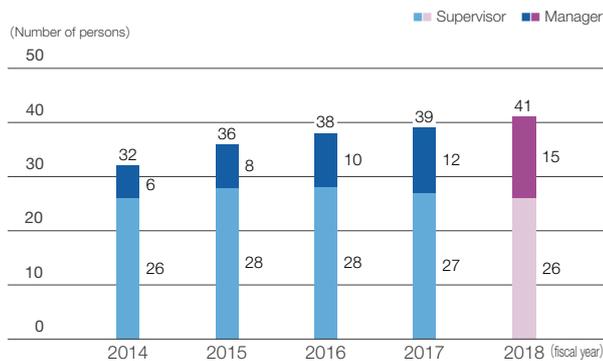
[Calculation method] Regular employees : As of March 31

Manager, Supervisor, Generalist : As of April 1, including employees temporarily transferred to Group companies

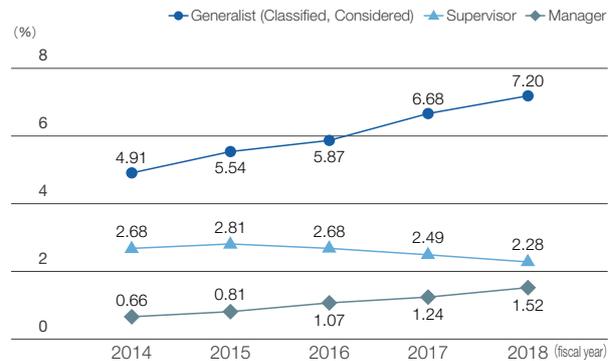
Percentage of Disabled Employees : As of March 31, including employees temporarily transferred to Group companies and the special subsidiary in Japan

Reemployed : As of March 31, including employees temporarily transferred to Group companies

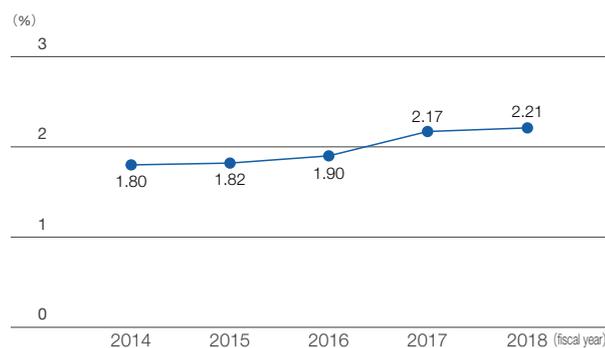
### Number of female employees in a managerial posts



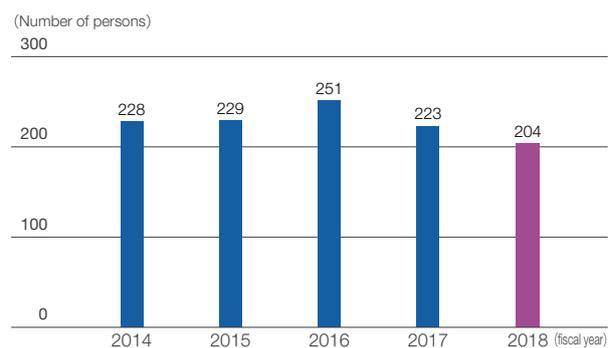
### Proportion of female employees



### Percentage of disabled employees



### Number of reemployed under the system



## Workplace Where Every Employee is Able to Work Energetically

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.

### Working hours

(fiscal year)	2014	2015	2016	2017	2018
Prescribed working hours (hours/year and person)	1,899	1,899	1,899	1,899	1,899
Actual working hours (hours/year and person)	2,016	1,981	1,986	1,993	1,994
Average overtime working hours (hours/month)	22	20	20	21	22

[Scope of tabulation] NGK SPARK PLUG CO., LTD. [Calculation method] Excluding employees temporarily transferred to Group companies and those on leave

### Paid holidays

(fiscal year)	2014	2015	2016	2017	2018
Paid holidays granted to employees (day(s))	19.24	19.19	19.23	19.31	—
Paid holidays taken by employees (day(s))	14.20	14.42	14.85	15.41	—
Rate of usage (%)	72.12	73.39	75.64	78.52	—

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

[Calculation method] Calculated for a fiscal year from October to next September (example : fiscal 2017 was started in October 2017 and ended in September 2018), excluding employees temporarily transferred to Group companies and those on leave

### Labor union

(fiscal year)	2014	2015	2016	2017	2018
The number of NGK SPARK PLUG Group labor union members (people)	5,413	5,373	5,486	5,590	6,438

[Scope of tabulation] 2014-2017 : NGK SPARK PLUG CO., LTD. 2018 : NGK SPARK PLUG CO., LTD., Ceramic Censor, Nittoku Supertech Tounou and Nittoku Supertech WKS  
[Calculation method] As of April 1

### Human resource development

(fiscal year)	2014	2015	2016	2017	2018
Total hours of training (hours)	88,333	82,059	84,816	86,252	81,632

[Scope of tabulation] NGK SPARK PLUG CO., LTD. [Calculation method] Calculated for the training (level-specific, global, etc.) provided by the Strategic Human Resources Department by multiplying the number of hours with the number of trainees

### External evaluation

We were selected to be one of the companies excellent in women's empowerment in the Nadeshiko Brand program implemented jointly by the Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange.



In 2019, we were included in the “Corporate Health Achievement Award Winners – White 500” for the third year in a row under the program implemented jointly by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi.



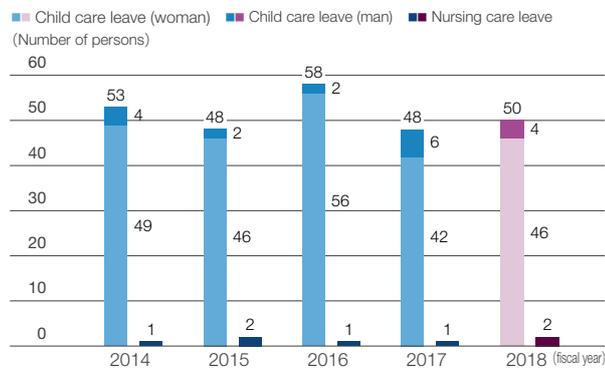
### Maternity/child care/long-term nursing care leave

(fiscal year)		2014	2015	2016	2017	2018
Employees who took maternity leave (%)		56	44	62	35	61
Employees who took child care leave	Men (people)	4	2	2	6	4
	Women (people)	49	46	56	42	46
Percentage of employees who returned to work after taking child care leave (%)		96	100	96	95	100
Users of the short working hour system for child care (people)		39	25	36	35	42
Employees who took nursing care leave (people)		1	2	1	1	2
Users of the short working hour system for nursing care (people)		0	0	0	0	0

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

[Calculation method] Employees who took maternity leave : Number of employees whose maternity leave started in the fiscal year  
 Employees who took child care leave : Number of employees whose child care leave started in the fiscal year  
 Percentage of employees who returned to work after taking child care leave : Percentage of employees who returned to work among those whose child care leave period expired in the fiscal year  
 Users of the short working hour system for child care : Number of employees who became users of the system in the fiscal year  
 Employees who took nursing care leave : Number of employees whose nursing care leave started in the fiscal year  
 Users of the short working hour system for nursing care : Number of employees who became users of the system in the fiscal year

### Number of employees using the leave schemes



## Occupational Safety and Health

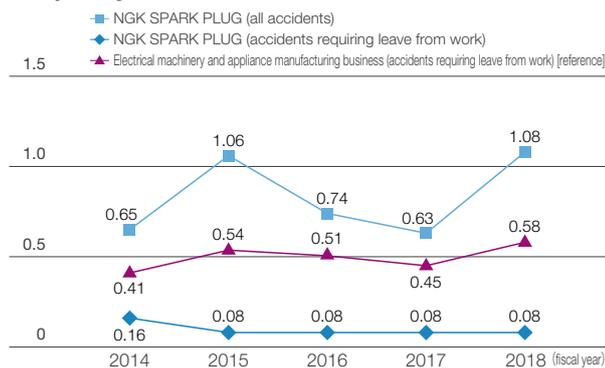
With a view to providing comfortable workplaces with zero occupational accidents, we have been conducting various safety activities for the prevention of accidents other than recurrence prevention. Aiming at the establishment of a safety culture from the viewpoint of “personnel,” “object,” and “mechanism,” we are taking the initiative to assign the first priority to safety.

(fiscal year)	2014	2015	2016	2017	2018
Total accident frequency rate (Including temporary employees) (%)	0.65	1.06	0.74	0.63	1.08
Frequency rate of accidents requiring leave from work (Including temporary employees) (%)	0.16	0.08	0.08	0.08	0.08
Frequency rate of occupational diseases (Including temporary employees) (%)	0	0	0	0	0

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

[Calculation method] Total accident frequency rate : Total number of victims per 1million working hours

### Frequency rate



Total accident frequency rate=Number of victims of all occupational accidents÷Total working hours×1million hours

Frequency rate of accidents requiring leave from work : Number of victims who took leave per 1million working hours

Frequency rate of accidents requiring leave from work=Number of victims of accidents requiring leave from work÷Total working hours×1million hours

Frequency rate of occupational diseases : Number of employees who took leave due to occupational diseases per 1million working hours

Frequency rate of occupational diseases=Number of employees who took leave due to occupational diseases÷Total working hours×1million hours

\*Occupational diseases include heatstroke, backache, poisoning by chemical substances and other diseases as defined by the Ministry of Health, Labour and Welfare.

## With Our Shareholders and Investors

### Dialogue with Investors

We attribute importance to having opportunities to make dialogue with our shareholders and investors with a focus on “active communication” and “fair information disclosure” so that we can meet a variety of their needs.

(fiscal year)	2014	2015	2016	2017	2018
Dialogue with institutional investors (times)	205	204	259	303	294
Dialogue through overseas investor roadshow meetings (times)	57	49	56	88	89
Number of participants in briefing sessions for individual investors (people)	925	489	1,148	1,117	1,195

[Scope of tabulation] NGK SPARK PLUG CO., LTD.

### Inclusion in SRI Indexes

The NGK SPARK PLUG Group is a member of the following indexes related to SRI (social responsible investing) : (As of March 31, 2019)

MEMBER OF  
**Dow Jones  
Sustainability Indices**  
In Collaboration with RobecoSAM



MSCI  
2018 Constituent  
MSCI Japan ESG  
Select Leaders Index

## With Local Communities and International Society

### Social Contribution Activities

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.

Type of contribution	Total amount (millions of yen)
Cash contributions	248.47
Time: employee volunteering during paid working hours	13.35
In-kind giving: product or services donations, projects / partnerships or similar	1.66
Management overheads	35.20

[Scope of tabulation] NGK SPARK PLUG Group

## ISO14001 Certified Locations

In order to make progress with systematic, effective environmental preservation activities, we have established an environmental management system that is based on our Group-wide environmental policy. Under this system, all Group companies strive to achieve the Eco Vision.

### Certification covering multiple units (Scope of applicability)

Country	Name of factories and companies	Certified initially in:
Japan	<b>NGK SPARK PLUG CO., LTD.</b>	
	Headquarters and Nagoya Plant	'99.8
	Komaki Plant, Miyanojo Plant, Ise Plant	'00.12
	Takenami Plant	'07.1
	Inuyama Logistics Center	'99.8
	<b>NITTOKU ALPHA SERVICE CO., LTD.</b>	'99.8
	<b>CERAMIC SENSOR CO., LTD.</b>	'00.12
	<b>NTK CERAMIC CO., LTD.</b>	
	Komaki Plant	'00.12
	Iijima Plant, Kani Plant	'02.12
	<b>CS NAKATSUGAWA CO., LTD.</b>	'16.12
	<b>NANSEI CERAMIC CO., LTD.</b>	'02.12
	<b>KAMIOKA CERAMIC CO., LTD.</b>	'04.1
	<b>SparkTec WKS CO., LTD.</b>	
	Head Office Plant	'04.1
	Satsuma Plant	'09.12
	<b>NICHIWA KIKI CO., LTD.</b>	'04.1
	<b>SparkTec TONO CO., LTD.</b>	
	Nino Headquarters Plant	'15.12
	Tono Plant	'04.1

### Certification obtained individually

Country	Name of factories and companies	Certified initially in:
Japan	NTK CERATEC CO., LTD.	'04.10
U.S.A.	<b>NGK SPARK PLUGS (U.S.A.), INC.</b>	
	WW 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.	'16.11
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

## Compliance with Environmental Laws and Regulations

To ensure compliance with environmental laws and regulations as well as agreements with local municipalities, we set stringent voluntary standards to prevent violations and complaints. When violations or complaints occurred, we took measures to prevent recurrence immediately.

(fiscal year)	2014	2015	2016	2017	2018
Environment-related non-compliance (cases)	3	5	2	0	0
Environment-related complaints (cases)	2	0	2	1	3

[Scope of tabulation] Environment-related non-compliance : NGK SPARK PLUG Group  
Environment-related complaints : NGK SPARK PLUG CO., LTD. and Groups in Japan

## Material Balance

Environmental burdens from business activities (Fiscal year ended March 31, 2019)

INPUT		Scope covered *1				OUTPUT		Scope covered *1			
		NGK SPARK PLUG	Group companies in Japan *2	Overseas companies *3				NGK SPARK PLUG	Group companies in Japan *2	Overseas companies *3	
Raw materials	<b>Ceramic and metal materials</b> Ceramic and metal materials purchased <b>55,000 tons</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 <b>Suppliers</b>	Output into waters	<b>Wastewater</b> Released into sewerage systems and public waters; consumption volume of tap water and well water. <b>1,540,000 m<sup>3</sup></b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<b>Electricity</b> Used in offices and plants <b>466,878 MWh</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			Output into air	<b>Chemical substances (PRTR)</b> Released into waters and notified by sites <b>0.6 tons</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>City gas</b> Used in offices and plants <b>19.64 million m<sup>3</sup></b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				Output into air	<b>Green house gas emissions</b> Energy-based and non-energy-based Green House Gas Emissions <b>325,700 tons-CO<sub>2</sub></b>	<input type="checkbox"/>	<input type="checkbox"/>
Energy	<b>LPG</b> Used in offices and plants and for testing, travel and transportation <b>7,595 tons</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 <b>Research, Design, Manufacturing, Sales</b>	Waste	<b>Chemical substances (PRTR)</b> Released into air and notified by sites <b>133 tons</b>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Other fuels</b> Used in offices and plants and for testing, travel and transportation <b>1,102 kL[crude oil equivalent]</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			Waste		<b>Waste generated (and treated on commission)</b> Total <b>20,103 tons</b>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>Renewable energy</b> Generated by solar power generators and small hydroelectric generators <b>576 MWh</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				Waste	<b>Effectively used (including waste sold)</b> <b>18,262 tons</b>	<input type="checkbox"/>	<input type="checkbox"/>
Water	<b>Tap water, well water</b> Tap water and groundwater used <b>1,540,000 m<sup>3</sup></b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 <b>Products</b>	Waste	<b>Not effectively used</b> <b>1,840 tons</b>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Chemical substances	<b>PRTR</b> Handled and notified by sites <b>923 tons</b>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	 <b>Logistics</b>	Logistics	<b>CO<sub>2</sub> emitted by external transporters</b> CO <sub>2</sub> emissions due to externally commissioned transportation <b>2,742 tons-CO<sub>2</sub></b>	<input type="checkbox"/>
Logistics		<b>Fuels used for transportation (outsourced)</b> Fuels used for transportation by trucks, ships, and aircraft <b>1,031 kL[crude oil equivalent]</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 <b>Customers</b>	<b>Product shipment</b>				
							<b>Customers</b>				

\*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., 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., NICHIBA 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., WOJIN 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 CO<sub>2</sub> emissions.

## Prevention of Global Warming

As a part of our activities to aid in mitigating climate change from medium and long-term perspectives, we set targets for CO<sub>2</sub> emission basic unit in fiscal 2020 under Global Eco Vision 2020. To attain these targets, we are working to reduce our energy use.

### Energy consumption

(fiscal year)	2014	2015	2016	2017	2018
Nonrenewable electricity purchased (MWh)	387,476	403,414	439,276	449,858	466,878
Renewable energy generated (MWh)	203	193	346	391	576
City gas (GJ)	714,190	726,808	819,167	866,965	904,294
LPG (GJ)	399,553	379,269	390,941	390,751	385,837
Other fuels (GJ)	89,925	81,658	75,394	39,077	42,597

[Scope of tabulation] NGK SPARK PLUG Group  
 [Calculation method] Other fuels : Gasoline, Diesel, Kerosene and Heavy oil

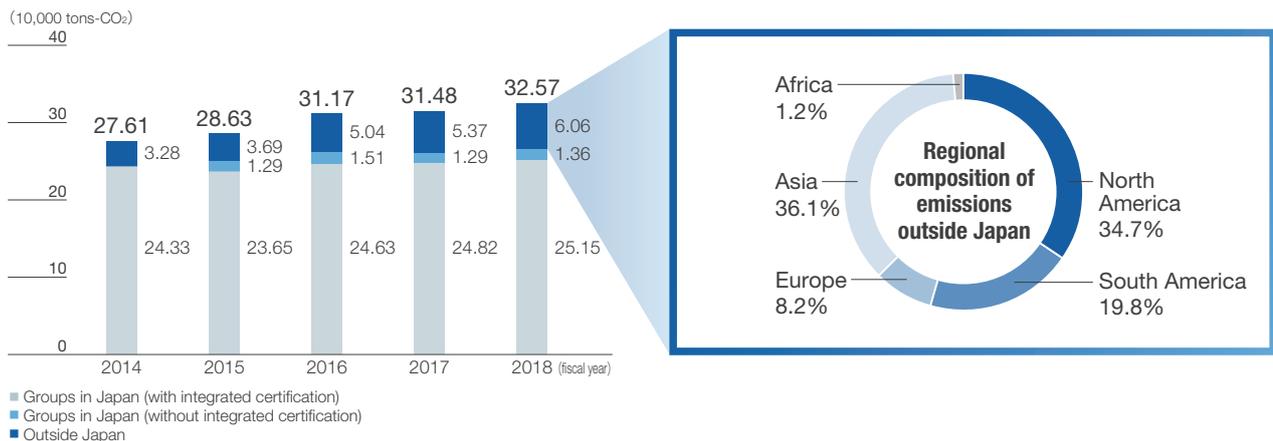
### Greenhouse gas emissions (Scope 1,2)

(fiscal year)	2014	2015	2016	2017	2018
Total direct GHG emissions [Scope 1] (10,000 tons-CO <sub>2</sub> )	6.51	6.40	6.95	6.84	7.01
Total indirect GHG emissions [Scope 2] (10,000 tons-CO <sub>2</sub> )	21.10	22.23	24.23	24.64	25.56
Scope 1+2 (10,000 tons-CO <sub>2</sub> )	27.61	28.63	31.17	31.48	32.57
CO <sub>2</sub> emission basic unit	1.33	1.30	1.27	1.18	1.15

[Scope of tabulation] Scope 1 · Scope 2 · Scope 1+2 : NGK SPARK PLUG Group  
 CO<sub>2</sub> emission basic unit : Groups in Japan (with integrated certification)

[Calculation method] Scope 1 : As for emissions by overseas Group companies, the amount was calculated by using the emission factor used in Japan.  
 Scope 2 : Calculated by using the CO<sub>2</sub> emission factor of 0.579 kg CO<sub>2</sub>/kWh in Japan, while in other countries calculated by using the CO<sub>2</sub> emission factor given to each of the countries by the GHG Protocol.

### Trend in CO<sub>2</sub> emissions from energy use



**Greenhouse gas emissions (Scope 3)**(10,000 tons-CO<sub>2</sub>)

(fiscal year)	2016	2017	2018
1 Purchased goods and services	7.24	7.91	8.07
2 Capital goods	11.77	12.54	17.13
3 Fuel- and energy-related emissions not included in scope 1 or scope 2	2.90	3.07	3.10
4 Upstream transportation and distribution	0.26	0.25	0.27
5 Waste generated in operations	0.08	0.10	0.39
6 Business travel	0.19	0.20	0.21
7 Employee commuting	0.69	0.71	0.74
8 Upstream leased assets		N/A	
9 Downstream transportation and distribution	—	—	—
10 Processing of sold products	—	—	—
11 Use of sold products	57.75	54.44	63.31
12 End-of-life treatment of sold products	0.02	0.02	0.02
13 Downstream leased assets		N/A	
14 Franchises		N/A	
15 Investments	1.67	1.90	1.90

[Scope of tabulation] NGK SPARK PLUG Group

[Calculation method] 1: Calculated by multiplying the figures shown in the material balance sheet by the relevant values retrieved from the database of emissions unit values built for the calculation of organizations' greenhouse gas emissions across their supply chains

2: Calculated by multiplying the cost of acquiring tangible fixed assets (shown in the financial statements) by the relevant value retrieved from the database of emissions unit values built for the calculation of organizations' greenhouse gas emissions across their supply chains

3: For power consumption, calculated by multiplying the amount used by the relevant value retrieved from the database of emissions unit values built for the calculation of organizations' greenhouse gas emissions across their supply chains. For gases, etc., calculated by multiplying the amount used with the relevant value retrieved from the IDEA LCA database.

4: Data notified (for products) by shippers specified under the Act on Rationalizing Energy Use

5: Calculated by totaling CO<sub>2</sub> emissions from the treatment of waste (calculated by multiplying the cost of waste treatment by the relevant value retrieved from the IDEA LCA database) and CO<sub>2</sub> emissions from the transportation of the company's waste (data on waste to be notified by shippers specified under the Act on Rationalizing Energy Use).

6: Calculated by multiplying the number of employees by the relevant value retrieved from the database of emissions unit values built for the calculation of organizations' greenhouse gas emissions across their supply chains

7: Calculated by multiplying the result of multiplying the number of employees by the number of their working days by the relevant value retrieved from the database of emissions unit values built for the calculation of organizations' greenhouse gas emissions across their supply chains

11: Calculated by multiplying the amount of CO<sub>2</sub> emissions per one ton of products calculated by using the Japan Auto Parts Industries Association's LCA tool by the weight of shipped products

12: Calculated by multiplying the weight of shipped products by the relevant value retrieved from the IDEA LCA database

15: Calculated by multiplying the amount of CO<sub>2</sub> emitted by the five companies that are ranked in the top five in terms of the monetary value of the stocks owned by NGK SPARK PLUG by the stockholding ratio

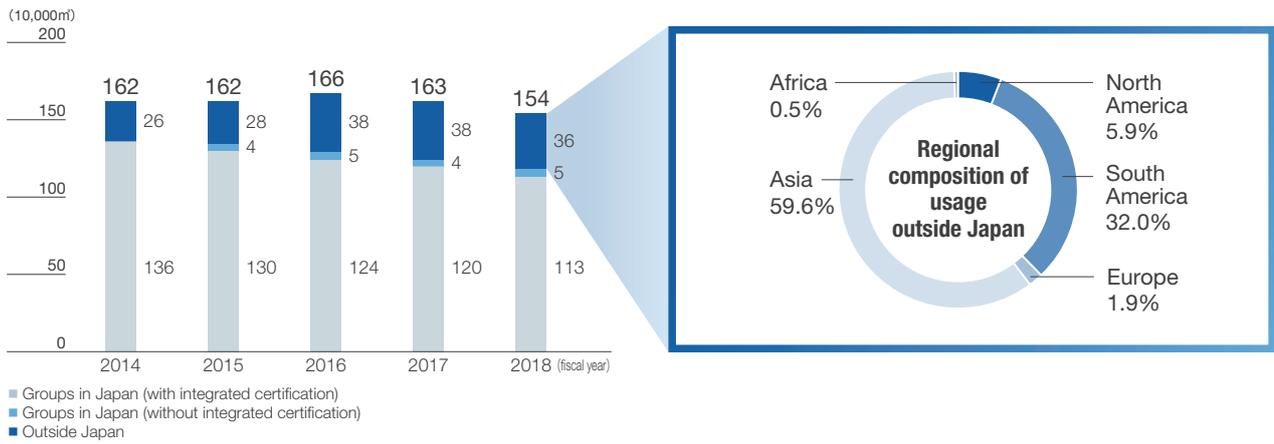
## Reducing the Amounts of Water Used

As measures to combat the depletion of water resources, we recognize the amount of tap and well water used in our business activities as water resources, and make efforts to reduce usage.

(fiscal year)	2014	2015	2016	2017	2018
Total water consumption (10,000 m <sup>3</sup> )	162	162	166	163	154

[Scope of tabulation] NGK SPARK PLUG Group

### Trend in tap and well water used



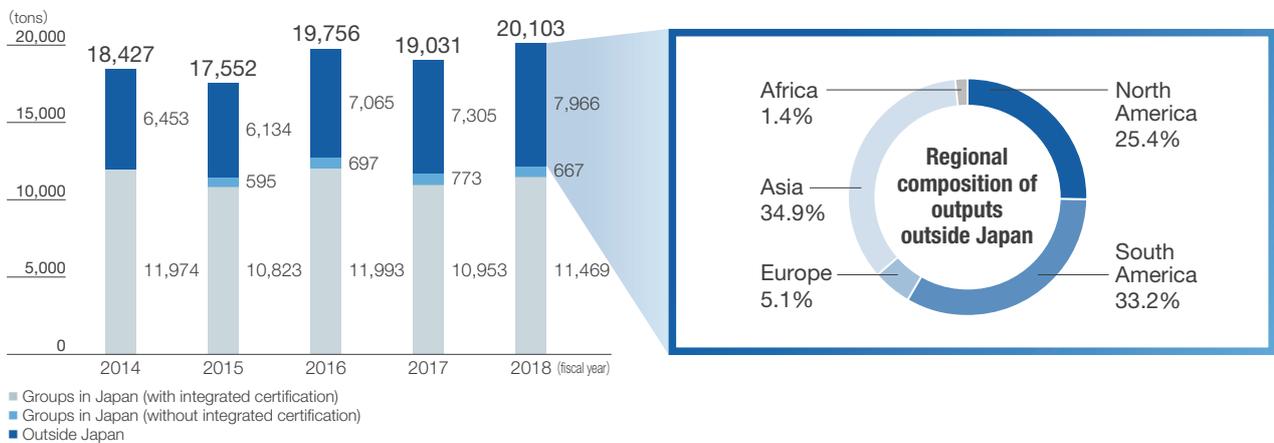
## Reduction of Waste Generated

We contribute to society by lowering defect rates in our manufacturing processes, reducing generated waste, and further treating waste to enable recycling.

(fiscal year)	2014	2015	2016	2017	2018
Total waste generated (tons)	18,427	17,552	19,756	19,031	20,103

[Scope of tabulation] NGK SPARK PLUG Group

### Trend in waste generated



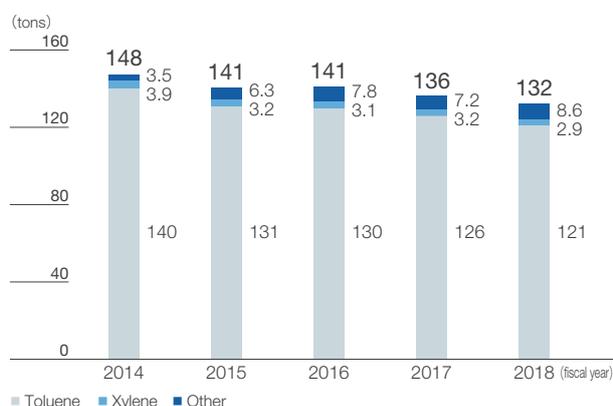
## Hazardous Chemical Substances

To respond appropriately to increasingly strict chemical substance regulations worldwide, we perform non-containment management for products and usage management within plants. For substances subject to the PRTR law, we are managing them appropriately by identifying the relevant amounts, including treatment, release, and transfer amounts.

(fiscal year)	2014	2015	2016	2017	2018
Amount of PRTR substances treated (tons)	939.4	863.8	856.2	862.7	920.0
Amount of PRTR substances released (tons)	147.7	140.6	141.2	136.0	132.3
Toluene	140.3	131.1	130.3	125.6	120.9
Xylene	3.9	3.2	3.1	3.2	2.9
Other	3.5	6.3	7.8	7.2	8.6

[Scope of tabulation] Groups in Japan (with integrated certification)

### Trend in PRTR substances released



## Environmental Communication

We are committed to fostering communication with local communities through environmental meetings and local cleanup activities to enhance cooperation with communities and earn more trust.

(fiscal year)	2014	2015	2016	2017	2018
Number of participants in our environment-related plant tours (people)	—	1,296	1,194	1,447	1,075
Number of participants in our environmental meetings (people)	—	24	28	252	237
Number of participants in our local clean-up activities (people)	—	871	694	520	563
On-site inspection at waste disposal company facilities (cases)	—	62	71	74	84

[Scope of tabulation] NGK SPARK PLUG Group

[Calculation method] On-site inspection at waste disposal company facilities : Number of waste treatment sites where inspection was carried out on-site

## Environmental Accounting

### Environmental conservation cost

(Unit : million yen)

Classification		Major efforts	Investment		Expense	
			2017	2018	2017	2018
Costs within the business area	Pollution prevention cost	Air/water pollution prevention and noise reduction	108	95	807	699
	Global environmental conservation cost	Global warming prevention, energy conservation	32	50	567	521
	Resource circulation cost	Effective resource utilization, industrial waste treatment/disposal	58	81	711	744
	Sub-total		198	226	2,086	1,964
Upstream & downstream cost		Employee environmental education, EMS construction and operation	0	0	9	6
Management activity cost		Employee environmental education, EMS construction and operation	19	11	961	894
R&D cost		R&D of products promoting environment preservation	1,331	1,488	10,272	8,626
Social activity cost		Nature protection, afforestation, environmental ads	0	0	283	12
Environment damage correction cost		Repair of soil contamination, disrupted nature	0	0	9	0
Other costs		—	0	0	5	0
Total			1,548	1,726	13,624	11,502

\*Any inconsistency between an aggregate of all itemized figures and a "Total" figure is due to rounding of fractions.  
[Scope of tabulation] Groups in Japan (with integrated certification)

### Economic benefits associated with environmental conservation activities

(Unit : million yen)

Area of recognized effect		2017	2018
Revenue	Revenue generated from the recycling of waste generated in operations or used products	133.6	207.6
Cost saving	Energy cost saving achieved from energy conservation efforts	104.0	166.0
	Reduction of water expenses through water saving	5.0	6.1
	Waste disposal cost saving achieved by resource conservation and recycling efforts	12.0	9.1
Total		254.6	388.8

[Scope of tabulation] Groups in Japan (with integrated certification)

### Quantity of environmental conservation benefits

Effect measured in the business area	Types of effect		2017	2018	Difference from the previous fiscal year
Effect measured with respect to resource input into operations	Energy consumption	Purchased electricity (GWh)	34,572	35,239	667
		Gas (million m <sup>3</sup> )	1,099	1,077	-22
		LPG (million m <sup>3</sup> )	7,149	6,954	-195
	Water consumption	Tap water (m <sup>3</sup> )	725,635	708,464	-17,171
		Well water (m <sup>3</sup> )	475,779	421,390	-54,389
Amount of PRTR substances treated (tons)		863	920	57	
Effect measured with respect to environmental load and waste from business activities	CO <sub>2</sub> emission from energy consumption (tons)		248,216	251,549	3,333
	Waste	Effectively used (tons)	10,683	11,376	694
		Not effectively used (tons)	270	93	-177
	Amount of PRTR substances released into air and water (tons)		136.0	132.3	-3.7

[Scope of tabulation] Groups in Japan (with integrated certification)

[Calculation method] Energy consumption · CO<sub>2</sub> emission from energy consumption : Excluding the amount used for and CO<sub>2</sub> emitted from the transportation activities

# Social and Environmental Information Verification Report



No.1811003510

## 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 “FY2018\* 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 “Standard for Aggregating Rules of Environmental Performance Data (ESKW-027-1)” and “Standard for Calculating the Injury Frequency Rates (ZESAF-001)” (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 2018 of the Company ended on March 31, 2019.

### 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 CO<sub>2</sub> emissions from Scope 1, 2 as GHG emissions, Water Usage, Waste Amount and Injury Frequency Rate. The verification was conducted to a limited level of assurance and quantitative materiality was set at 5 percent each of the total emissions and total amount of Water Usage and Injury Frequency Rate in the Report.

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

Our verification procedures included:

- Visiting three domestic sites: NGK SPARK PLUG CO., LTD. Head Office and Nagoya Plant, NGK SPARK PLUG CO., LTD. Kagoshima-Miyanojo Plant and NGK SPARK PLUG CO., LTD. Ise Plant, selected by the Company.
- On-site assessment to check the report scope and boundaries; monitoring points of activity data; monitoring and calculation system; and activity data. The number and location of sampling sites for on-site assessment were selected by the Company.
- Visiting NGK SPARK PLUG CO., LTD. Head Office and Nagoya Plant for validation of the Rules and verification of Injury Frequency Rates.

### 3. Conclusion

Based on the procedures described above, nothing has come to our attention that caused us to believe that the statement of the information regarding the Company’s FY2018 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  
July 25, 2019



**NGK SPARK PLUG CO., LTD.**

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