NHK SPRING CO.,LTD.

Building a better world by building innovative products

NHK SPRING REPORT 2018 Separate volume

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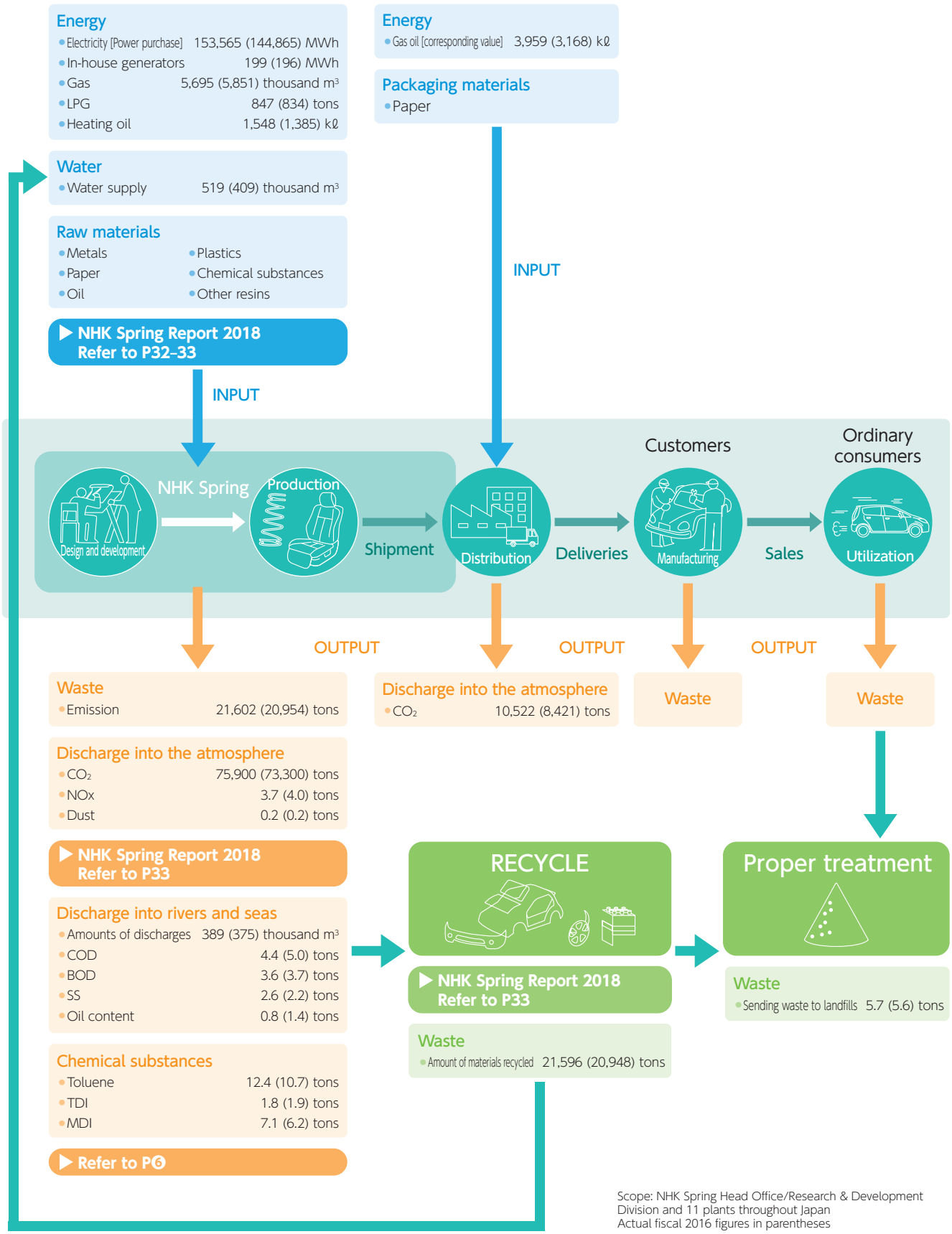
Progress in environmental activities

	Progress by NHK Spring	Progress by domestic Group companies	Trends in society
2001	Feb.: 5th Revised Environmental Voluntary Action Plan Apr.: Isehara Plant gained ISO 14001 certification (all plants now certified) Jun.: 7th Global Environment Forum held	May: Horikiri gained ISO 14001 certification Aug.: Yokohama Kiko gained ISO 14001 certification Nov.: Topura gained ISO 14001 certification	Ministry of the Environment established Electric Appliance Recycling Law enacted
2002	Jan.: Recycling Center completed at Yokohama facility Feb.: 6th Revised Environmental Voluntary Action Plan May: 8th Global Environment Forum held Jun.: Received 10th Yokohama Environmental Conservation Work Award Dec.: Yokohama facility received Fiscal 2002 Kanagawa Global Environment Award	Mar.: NHK Teleflex Corporation gained ISO 14001 certification Apr.: Tokuhatsu gained ISO 14001 certification Oct.: NHK Sales gained ISO 14001 certification Oct.: NHK Spring Mutsumi-kai Technical Committee Global Environmental Issues Subcommittee launched	Soil Contamination Countermeasures Law announced Automobile Recycling Law announced Japan ratified the Kyoto Protocol
2003	Feb.: 7th Revised Environmental Voluntary Action Plan Mar.: Zero emissions achieved at Yokohama facility Jun.: 9th Global Environment Forum held	May: NHK Spring Mutsumi-kai Technical Committee Global Environmental Issues Subcommittee meeting Jul.: NHK Transport gained ISO 14001 certification Oct.: Sumihatsu gained ISO 14001 certification Oct.: Uniflex gained ISO 14001 certification Nov.: Nippon Shaft gained ISO 14001 certification	Automobile Recycling Law enacted Soil Contamination Countermeasures Law enacted Amended Law Concerning the Rational Use of Energy enacted
2004	Feb.: 8th Revised Environmental Voluntary Action Plan Jun.: 10th Global Environment Forum held Dec.: Atsugi Plant received Fiscal 2004 Kanagawa Global Environment Award	Jul.: NHK Spring Mutsumi-kai Technical Committee Global Environmental Issues Subcommittee meeting Sep.: Tohoku Nippatsu gained ISO 14001 certification	Amended Air Pollution Control Law announced
2005	Jan.: Yokohama facility received Commendation at PRTR Awards Feb.: 9th Revised Environmental Voluntary Action Plan May: 11th Global Environment Forum held	Mar.: Faurecia-NHK Kyushu gained ISO 14001 certification Mar.: SNIC gained ISO 14001 certification	Amended Automobile Recycling Law enacted Kyoto Protocol came into force
2006	Feb.: 10th Revised Environmental Voluntary Action Plan Jun.: 12th Global Environment Forum held Dec.: Isehara Plant received Fiscal 2006 Kanagawa Global Environment Award	Feb.: NHK Precision gained ISO 14001 certification Mar.: Ayase Seimitsu gained ISO 14001 certification	Amended Law Concerning the Rational Use of Energy enacted Amended Law Concerning the Promotion of Measures to Cope with Global Warming enacted
2007	Jun.: 13th Global Environment Forum held	Apr.: Ites gained ISO 14001 certification May: Sindai gained ISO 14001 certification	Amended Law Concerning the Recovery and Destruction of Fluorocarbons enacted
2008	Jun.: 11th Revised Environmental Voluntary Action Plan Jun.: 14th Global Environment Forum held	Jun.: Affiliates Environmental Liaison Committee announced	G8 Toyako Summit (Hokkaido)
2009	Feb.: Installed a solar electric generator panel at Yokohama facility Jun.: 15th Global Environment Forum held		G8 L'Aquila Summit (Italy)
2010	Jun.: 16th Global Environment Forum held	Feb.: NHK Transport gained Green Management certification Mar.: Domestic Group companies achieved zero emissions	Tenth Conference of the Parties to the Convention on Biological Diversity (COP10) Implementation of Amended Soil Contamination Countermeasures Act
2011	Jun.: 17th Global Environment Forum held		Implementation of Amended Water Pollution Control Act (Storage Facilities)
2012	Jun.: 18th Global Environment Forum held Nov.: Yokohama Office recognized as an Excellent office in 3Rs (Let's Reduce, Reuse and Recycle!) by Yokohama City		Implementation of Amended Water Pollution Control Act (Facilities using Hazardous Substances) First commitment period under Kyoto Agreement ended
2013	Feb.: Yokohama Office won the Energy Saving Award of Kanagawa Global Environment Prize Nov.: 24th NHK Spring Forum held (merged with the 19th Global Environmental Forum) Nov.: Yokohama Office received Yokohama City recognition for excellence in the 3Rs (Let's Reduce, Reuse and Recycle!) (two years in a row)	Dec.: Tokuhatsu Sanda Plant completed and solar generation panels installed on plant roof	Start of the Kyoto Protocol second commitment period (2013 - 2020)
2014	Apr.: Starting Clean-up Activity of NHK Spring Mitsuzawa Football Stadium by Volunteers Oct.: Yokohama Office received energy efficiency field visit from the Ministry of Economy, Trade and Industry Nov.: 25th Global Environment Forum Nov.: Yokohama Office received Yokohama City recognition for excellence in the 3Rs (Let's Reduce, Reuse and Recycle!) (three years in a row)	Nov.: NHK Spring Production Company received climate change field survey based on the Kanagawa Prefecture ordinance Dec.: Tokuhatsu Sanda Plant received ISO 14001 certification (expanded authentication)	United Nations Climate Change Summit held Publication of the IPCC Fifth Assessment Report Act on Rational Use and Proper Management of Fluorocarbons enacted
2015	Oct.: 26th Global Environment Forum held Nov.: Komagane Plant (Industrial Machinery & Equipment) receiving on-site GHG countermeasure survey based on regulations of Nagano Prefecture Nov.: Yokohama Office received Yokohama City recognition for excellence in the 3Rs (Let's Reduce, Reuse and Recycle!) (four years in a row)		United Nations Framework Convention on Climate Change (COP21) Adoption of Paris Agreement
2016	Nov.: 27th Global Environment Forum held Nov.: Yokohama Office received Yokohama City recognition for excellence in the 3Rs (Let's Reduce, Reuse and Recycle!) (five years in a row)		Minamata Convention on Mercury enacted The enactment of law to prevent mercury pollution Amendments to the Stockholm Convention on Persistent Organic Pollutants (POPs Convention)
2017	Aug.: NHK Spring Group started energy conservation diagnostics Nov.: 28th Global Environment Forum held Dec.: Yokohama Office received Yokohama City recognition for excellence in the 3Rs (Let's Reduce, Reuse and Recycle!) (six years in a row)	Sep.: NHK Spring Group started energy conservation diagnostics	Issuance of the Chemical Substances Control Law Chinese Waste Import Controls: Restricts imports of some solid wastes

Business activities and the product lifecycle

We are working to reduce the burden on the environment by understanding the overall business in terms of product lifecycles and quantifying inputs and outputs wherever possible. We also aim to bring about a recycling society by recycling waste.



Scope: NHK Spring Head Office/Research & Development Division and 11 plants throughout Japan
Actual fiscal 2016 figures in parentheses

ISO 14001

As an organization, we are involved in protecting the environment, and we have gained ISO 14001 international certification for our environmental management systems.

NHK Spring certification status

We began preparations to acquire the ISO 14001 certification in 1996 and acquired the certification at our Yokohama spring plant in January 1997 before our competitors in the same industry. This was the beginning of acquiring the ISO 14001 at three plants every year until the final plant was certified in April 2001 to succeed in acquiring the certification at all of our 11 plants in Japan. Today, we have completed the renewal to the ISO 14001: 2015 version at all of the NHK Spring plants which have already acquired the ISO 14001. We will maintain this certification in the future.

ISO 14001 certification **11** Plants (Japan)

Dates NHK Spring acquired ISO 14001 certification

Divisions	Plants	Dates acquired
Suspension Spring Division	Yokohama Plant (Suspension Springs)	January 1997
	Shiga Plant	March 1998
Seating Division	Gunma Plant	March 1998
	Yokohama Plant (Seating)	May 1999
	Toyota Plant	March 1999
Precision Spring & Components Division	Ina Plant	June 1999
	Atsugi Plant	November 2000
DDS (Disk Drive Suspension) Division	Komagane Plant (DDS)	June 2000
Industrial Machinery & Equipment Division	Isehara Plant	April 2001
	Komagane Plant (Industrial Machinery & Equipment)	November 1998
	Yasu Plant	August 2000

Certification status of Group companies

Domestic Group companies

All 16 of our Group companies that are members of the joint Safety and Environment Subcommittee of the Engineering Department of the NHK Spring Mutsumi-kai have acquired the ISO14001. Today, we have completed the renewal to the ISO 14001: 2015 version at all of the affiliate companies in Japan which have already acquired the ISO 14001. We will maintain this certification in the future.

Overseas Group companies

We will also further the acquisition of the ISO 14001 certification at our overseas Group companies. As of fiscal 2018, we have succeeded in acquiring the certification at 16 overseas Group companies and will work to gradually acquire the certification for the rest of the overseas Group companies in the future.

ISO 14001 certified Group Companies

16 companies (Japan), **16** companies (Overseas)

Dates Group companies acquired ISO 14001 certification

Region	Group companies	Dates acquired
Domestic	Horikiri, Inc.	May 2001
	NHK Spring Production Company	August 2001
	Yokohama Kiko Co., Ltd.	August 2001
	Topura Co., Ltd.	November 2001
	NHK MEC Corporation	March 2002
	Tokuhatsu Co., Ltd.	April 2002
	NHK Sales Co., Ltd.	October 2002
	Sumihatsu Co., Ltd.	October 2003
	Uniflex Co., Ltd.	October 2003
	Nippon Shaft Co., Ltd.	November 2003
	Tohoku Nippatsu Co., Ltd.	September 2004
	Faurecia-NHK Kyushu Co., Ltd.	March 2005
	NHK Precision Co., Ltd.	February 2006
	Ayase Seimitsu Co., Ltd.	March 2006
	Ites Co., Ltd.	April 2007
	Sindai Co., Ltd.	May 2007
North, Central and South America	Rassini-NHK Autopeças Ltda.	May 2002
	NHK of America Suspension Components Inc.	January 2003
	New Mather Metals, Inc.	July 2003
	NHK Seating of America Inc.	September 2004
Asia	NHK Spring (Thailand) Co., Ltd.	June 2000
	NHK Manufacturing (Malaysia) SDN. BHD.	August 2001
	NHK Spring India Ltd.	October 2003
	Autrans (Thailand) Co., Ltd.	May 2004
	NHK Precision (Thailand) Co., Ltd.	January 2005
	NHK-Uni Spring (Guangzhou) Co., Ltd.	March 2005
	NAT Peripheral (Dong Guan) Co., Ltd.	October 2005
	NHK Spring Precision (Guangzhou) Co., Ltd.	December 2005
	Uni Auto Parts Manufacture Co., Ltd.	March 2006
	NACI	January 2010
	NSP	October 2014
Europe	Ibérica de Suspensiones, S.L.	December 2003

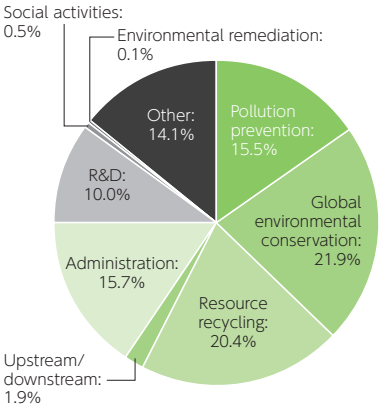
Environmental accounting

We identify the costs and effects of our environmental conservation activities in environmental accounting, and we use this in running the company.

Fiscal 2017 environmental accounts - classifications and results

We introduced environmental accounting in fiscal 2000 in accordance with the Environmental Accounting Guidelines (2005 edition) issued by the Ministry of the Environment while collecting data for the 9 categories listed in the table on the right.

Using the fixed standard we have set, we calculated our fiscal 2017 expenditure on supporting the environment at a total of ¥889.4 million. The breakdown is shown in the table to the right, but due to the review of various environmental conservation activities, the energy-saving and resource recycling costs increased year-on-year while the research and development as well as environmental conservation costs decreased.



Fiscal 2017 - Cost of environmental conservation

(Units: ¥ million/year)

Classification of costs	Main elements	Value* in FY2016	Value* in FY2017
1) Pollution prevention	Maintenance of effluent treatment facilities and dust collectors, measurement and monitoring of air and water quality and noise, and other preventive measures	148.1	137.9
2) Global environmental conservation	Preservation of green areas around plants, energy-saving measures, warming prevention, etc.	165.6	194.8
3) Resource recycling	Waste treatment, zero emissions measures, office recycling, etc.	156.0	181.1
4) Upstream/ downstream	Limiting environmental burdens from our suppliers and customers associated with our own production activities (green purchasing, product recycling, reduced packaging, and so on)	23.2	16.8
5) Administration	Waste manifest management, ISO 14001 maintenance and renewal inspections and ISO 14001 office personnel costs, reporting to the government, etc.	117.9	139.8
6) R&D	Research to reduce environmental loads and development of products to contribute to reducing environmental loads	146.2	88.7
7) Social activities	Social service activities (cleaning waterways and surroundings of plants), etc.	6.5	4.1
8) Environmental remediation	Remediating environmental damage to surroundings	0.6	0.7
9) Other	Costs for environmental conservation other than the above (including handling of PCB waste treatment)	14.4	125.4
Total		778.4	889.4

* Value: Totals of Environmental Investments and Environmental Conservation

Fiscal 2017 - Cost of environmental conservation

889.4 million yen

Classification and performance of fiscal 2017 investments

Our results for fiscal 2017 are shown in the table below. Promoting resource recovery and reclaiming of valuables from landfill waste has maintained a low level of waste since 2010. The amount of unit energy consumption and CO_2 emissions as well as landfill waste decreased year-on-year, but the amount of resource recovery waste increased due to an expansion in our business operations. The unit consumption of waste processing costs also increased due to rising prices of waste contractors. We will continue to make improvements for cost-effective investments in the future.

Performance of fiscal 2017 investment effects

	Material effects*1			Economic effects*2			Assessment
	FY2016 performance	FY2017 performance	Effects	FY2016 performance	FY2017 performance	Effects	
Energy use per unit output (GJ/¥ million)*3	10.30	10.17	△ 0.12	–	–	–	○
CO_2 per unit output (ton C/¥ million)*3	0.116	0.114	△ 0.002	–	–	–	○
Wastes to landfill (tons/year)	6.0	5.7	△ 0.3	–	–	–	○
Wastes recycled (tons/year)	20,948	27,351	6,403	–	–	–	○
Energy costs per unit output (¥/¥ thousand)*3	–	–	–	14.8	14.9	0.1	○
Waste treatment costs per unit output (¥/¥ thousand)*3	–	–	–	0.6	0.7	0.1	×*4

*1 Material effects: Reduction in environmental pollutants, etc. *2 Economic effects: Energy savings and cost reduction on waste, etc.
*3 Unit output: Values to Sales *4 Rise in unit cost of waste processing and unit cost of transport

Managing and reducing pollutants

We strive to properly manage and reduce pollutants according to our own standards, and the law and rules of the organizations we belong to.

Pollutant Release and Transfer Register (PRTR) surveys

Since fiscal 1997, we have taken part in voluntary PRTR surveys organized by Nippon Keidanren (Japan Business Federation), in an effort to establish the amounts of pollutants that we handle, release and transfer.

We have been reporting data to the Ministry of Economy, Trade and Industry under the PRTR Law since June 2001. However, we have set up our own survey standards to quantify the use of chemical substances across all departments of the company.

Since fiscal 2005, our domestic Group companies have conducted the same voluntary PRTR surveys in an effort to reduce the release of pollutants.

The table below lists each of the substances of which we handle a total of at least 0.1 tons per year.

From fiscal 2011, we continued to manage chemical substances so that we did not use substances of very high concern under European REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulations, and also those that we expected to be regulated in future.

Results of fiscal 2017 survey of pollutant releases and transfers (April 1, 2017 - March 31, 2018)

(Units: Tons/year)

PRTR Law Cabinet Order No.	Name	Types of designated chemical compounds	Amount used yearly	Amount emitted						Amount moved	
				Atmosphere	Water quality	Soil	Buried on-site			Sewage system	Waste (subcont.)
							Stable	Managed	Isolated		
1	Zinc compounds (water-soluble)	Class I	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
20	2-aminoethanol	Class I	1.3	0.9	0.0	0.0	0.0	0.0	0.0	0.1	0.9
30	Linear alkylbenzenesulfonate	Class I	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
53	Ethyl benzene	Class I	4.2	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
71	Ferric chloride	Class I	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	183.4
80	Xylene	Class I	20.2	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
232	N,N-dimethylformamide	Class I	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
296	1,2,4-trimethylbenzene	Class I	2.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
297	1,3,5-trimethylbenzene	Class I	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
298	Toluene diisocyanate (TDI)	Class I	1230.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.8
300	Toluene	Class I	114.0	29.3	0.0	0.0	0.0	0.0	0.0	0.0	12.4
309	Nickel compounds	Special Class I	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
384	1-Bromopropane	Class I	11.1	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2
410	Polyoxyethylene nonylphenyl ether	Class I	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
412	Manganese and its compounds	Class I	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
448	Methylene diphenyl diisocyanate (MDI)	Class I	784.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1
455	Morpholine	Class I	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Total volume of PRTR substances			2239.2	56.1	0.0	0.0	0.0	0.0	0.0	1.4	207.2
Domestic Group companies											
1	Zinc compounds (water-soluble)	Class I	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	11.5
20	2-aminoethanol	Class I	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	Ethyl benzene	Class I	32.5	31.3	0.0	0.0	0.0	0.0	0.0	0.8	0.4
66	1,2-Epoxybutane	Class I	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69	2,3-Epoxypropyl phenyl ether	Class I	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	Xylene	Class I	75.8	66.0	0.0	0.0	0.0	0.0	0.0	1.8	0.9
87	Chromium and chromium (Ⅲ) compounds	Class I	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
185	Dichloropentafluoropropane (HCFC225)	Class I	1.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
232	N,N-dimethylformamide	Class I	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240	Styrene	Class I	23.4	18.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
296	1,2,4-trimethylbenzene	Class I	13.3	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
297	1,3,5-trimethylbenzene	Class I	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
300	Toluene	Class I	115.6	114.4	0.0	0.0	0.0	0.0	0.0	0.4	0.8
304	Lead and its compounds	Class I	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
321	Vanadium compounds	Class I	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
354	Bis (n-butyl) phthalate	Class I	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
384	1-Bromopropane	Class I	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
Total volume of PRTR substances			282.0	236.5	0.0	0.0	0.0	0.0	0.0	3.2	15.8

*Industrial wastes include waste materials that have value or no value and that can be recycled. Excludes materials sold.
*Volume moved when discharged into public sewage system

Head Office

Research & Development Division, Engineering Division

Location: Kanazawa-ku, Yokohama
Business areas and products: Planning, management, R&D
Commenced operations: February 1991

Overview of our activities
The head office of NHK Spring is located in the Yokohama Office with the Suspension Spring and Seating Divisions. We engage in business activities that take into consideration the communities around each production division, the head office, and each of our plants. We take care to respond dutifully in cooperation with each municipal, especially in terms of waste water, air, noise, and waste.

Outlook and policies

We will develop new products and new equipment related to saving energy and using renewable energy as a function of the head office and will support the environmental activities of the Group through a wide range of environmental education and environmental audits. In addition, by taking the lead with projects such as installing solar power generation panels and introducing LED lighting, we are the driving force in overall Group environmental activities.

Fiscal 2017 and 2018 initiatives

Reducing CO_2 emissions

- The Safety & Environment Activities Department at our head office conducted energy saving diagnostics and strove to reduce CO_2 emissions in fiscal 2017 with focus on the plants which have a large amount of CO_2 emissions. The Yokohama Office is also continuing to transition to LED lighting while updating the air-conditioning equipment of the office to an energy-saving system.
- We will continue energy saving diagnostics and activities to eliminate unevenness of energy use in fiscal 2018, aiming to achieve our CO_2 reduction targets.

Managing chemicals

- The Safety & Environment Activities Dept. at our head office compiles chemical substances used in Japan (including Group companies), and aggregates those chemical substances based on our unique criteria every year. We added and updated the chemical substances included in the Green Procurement Guidelines while reporting some of the data we collected to the government. We are also pioneering the promotion of risk assessment of chemical substances and 5S activities so that our operators engage in safe operations within our plants.

Reducing industrial waste

- During fiscal 2017, we implemented separation recycling of waste at the Head Office (including the Research & Development Division) and activities to reduce emissions and costs. As a result, we were able to achieve our recycling targets, but did not achieve our emissions targets.
- In fiscal 2018, while maintaining a 100% recycling rate, we will strive to reduce the amount of waste by expanding information about reclaiming valuables from waste throughout the Group.

● Atmosphere (Regulated values: Air Pollution Control Law, Yokohama Guidelines)

Substance	Equipment		Regulated value	Actual
NOx	Hot water boiler	A	0.041	0.011
		B	0.025	0.007
		C	0.025	0.006
	Cooling water generator	A	0.029	0.004
		B	0.018	0.003
		C	0.024	0.002
Dust	Hot water boiler	A	0.050	<0.002
		B	0.050	<0.002
		C	0.050	<0.003
	Cooling water generator	A	0.050	<0.003
		B	0.050	<0.004
		C	0.050	<0.003

NOx units: m^3N/h Dust units: g/m^3N

● Water quality: Main Building (Regulated values: Yokohama sewage regulations)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	7.5	6.9	—
Oil	5	2.5	0.2	1.0
Fe	3	<0.3	<0.3	<0.3
Zn	1	<0.1	<0.1	<0.1
Ni	1	0.1	<0.1	<0.1
T-Cr	2	<0.2	<0.2	<0.2
Fluorine	8	1.0	<0.8	<0.8
Phenols	0.5	<0.05	<0.05	<0.05
NH_4	380	<0.3	<0.3	<0.3

Units: mg/ℓ

● Water quality: R&D Building (Regulated values: Yokohama sewage regulations)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	7.3	6.8	—
Oil	5	2.4	0.1	1.0
Fe	3	1.5	<0.3	0.6
Zn	1	<0.1	<0.1	<0.1
Ni	1	<0.1	<0.1	<0.1
T-Cr	2	<0.2	<0.2	<0.2
NH_4	380	1.7	1.0	1.2

Units: mg/ℓ

Suspension Spring Division

Yokohama Plant

Location: Kanazawa-ku, Yokohama
Products: coil springs, Leaf springs, and metal bellows
Commenced operations: November 1987

Mitsuhiro Sugiyama
Plant Manager

Outlook and policies

In order to achieve the environmental policy of "global environment-friendly spring manufacturing," our plants will make efforts to reduce CO_2 emissions through energy-saving activities, recycle, reuse valuable resources, and reduce industrial waste by making the production lines more efficient. We will contribute to environmental conservation and preventing global warming through continuous improvement of environmental management system and raising awareness of environmental issues of all employees.

Fiscal 2017 and 2018 initiatives

Reducing CO_2 emissions and waste

- Each plant works to reduce CO_2 emissions and waste under the slogan, "global environment-friendly spring manufacturing." On the other hand, all of the plants have united to incorporate environmental management toward TPM activities in an effort to better the environment. In fiscal 2017, these plants adapted to and acquired the ISO 14001: 2015 certification and have been working every day with the aim of taking environmental management to the next level.
- We achieved our company-wide targets for the CO_2 emissions index in fiscal 2017 by transitioning plants from fluorescent to LED lighting, reviewing the quantity control system for compressors as well as the settings for the air pressure, and reducing the amount of gas used through heat-proof paint.
- In fiscal 2018, we will strive to further improve energy savings by changing the area of focus to strive to lower waste emissions and put into practice global environment-friendly spring manufacturing.

● Atmosphere (Regulated values: Air Pollution Control Law, Yokohama Guidelines)

Substance	Equipment		Regulated value	Actual
NOx	Metal reheating furnace	A	0.128	0.070
		B	0.110	0.023
		C	0.212	0.045
		D	0.169	0.078
		E	0.119	0.067
	Metal tempering furnace	A	0.202	0.024
		B	0.123	0.002
		C	0.104	0.021
		D	0.085	0.007
		E	0.059	0.005
Dust	Metal reheating furnace	A	0.1	<0.002
		B	0.1	0.004
		C	0.1	<0.002
		D	0.1	<0.002
		E	0.1	<0.003
	Metal tempering furnace	A	0.1	<0.005
		B	0.1	<0.009
		C	0.1	<0.006
		D	0.1	<0.005
		E	0.1	<0.006

NOx units: m^3N/h Dust units: g/m^3N

● Water quality (Regulated values: Yokohama sewage regulations)

Item		Regulated value	Actual		
			Maximum	Minimum	Average
pH		5-9	7.2	6.5	—
Oil	Animal and vegetable	30	11.0	1.5	5.7
	Mineral	5	0.7	0.1	0.3
Fe		3	<0.3	<0.3	<0.3
Zn		1	0.2	<0.1	<0.1
Ni		1	0.8	0.2	0.5
Mn		1	<0.1	<0.1	<0.1
Fluorine		8	2.5	<0.8	<0.8
Boron		10	<1.0	<1.0	<1.0
Total nitrogen		240	123	13	61
Total phosphorus		32	<1.0	<1.0	<1.0
NH_4		380	87	6	48

Units: mg/ℓ

Suspension Spring Division

Shiga Plant

Location: Koka, Shiga
Products: Coil springs, stabilizer bars, and torsion bars
Commenced operations: November 1973

Masanao Ueda
Plant Manager

Outlook and policies

Environmental conservation is one of the six core elements of STPM (Strategy for Total Power Management) conducted at our plants, and we take practical measures to allow all our people to engage in it. We are working hard towards making environmentally-friendly springs.

Fiscal 2017 and 2018 initiatives

Energy saving

- In fiscal 2017, we adopted quantity control circuits for compressor systems at Plant No. 2 and No. 3 as well as optimization control to operate compresses in accordance with the operational status of the area in addition to installing auxiliary motor-driven compressors to independently operate small machinery. Plant No. 1 also reduced power consumption by transitioning all of its ceiling lights to LED lighting (114 bulbs) in addition to conducting activities to reduce air leakage.
- In fiscal 2018, we aim to reduce CO_2 emissions even more by adopting optimization control for compressors at Plant No. 1, transitioning ceiling lights at plants to LED lighting, and continually engaging in other energy-saving activities.

Reducing waste

- In fiscal 2017, we were able to reduce sludge emissions by 25% compared to fiscal 2016 by advancing sludge drying to achieve all of our emission index targets.
- In fiscal 2018, we will promote the reduction of industrial waste, global environmental conservation, and management to sustain waste water quality.

● Atmosphere (Regulated values: Air Pollution Control Law)

Substance	Equipment		Regulated value	Actual
NOx	Metal reheating furnace	A	180	67
		B	180	36
		C	180	32
		D	180	54
		E	180	43
Dust	Metal reheating furnace	A	0.25	<0.005
		B	0.20	<0.003
		C	0.20	<0.003
		D	0.20	<0.002
		E	0.20	<0.012

NOx units: ppm Dust units: g/m³N

● Water quality (Regulated values: Agreement with Koka)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	6-8.5	7.5	6.9	—
BOD	30	2.0	<1.0	<1.0
COD	30	2.0	<1.0	<1.0
SS	70	2.0	<1.0	<1.0
Oil	5	3.2	0.4	1.5
Total nitrogen	12*	11.8	1.4	5.1
Total phosphorus	1.2*	0.3	<0.1	<0.1
Fluorine	8*	0.8	<0.8	<0.8
Boron	10*	<1	<1	<1
Zn	1*	<0.1	<0.1	<0.1

Units: mg/ℓ *Shiga prefectural regulations

Seating Division

Gunma Plant

(Ojima area)	(Ota area)
Location: Ota, Gunma	Ota, Gunma
Products: Automotive seats	Automotive interior products
Commenced operations: December 1986	July 1969

Masayoshi Yamaguchi
Plant Manager

Outlook and policies

At our plant, we undertake systematic production activities from development and design to manufacturing and shipment of automobile seats and interior parts for automobiles that are safe and kind to people and the environment, contributing to the development of automobile society. Aware that the mission given to us is to pass down the earth, green and beautiful, to the next generation, our plant will expand production activities considering environmental conservation that is safe and people-friendly and promote volunteer and cleaning activities founded in the community.

Fiscal 2017 and 2018 initiatives

Energy saving

- In fiscal 2017, we pushed forward the transition to LED lighting on the second floor of our new seating wing and completed the midterm plan to transition our plants to LED lighting. We were also able to increase efficiency even further by gradually updating aging equipment such as our compressors and air conditions installed roughly 30 years ago.
- In fiscal 2018, we estimate a high load on processes in addition to forecasting the use of more energy as a plant during the migration to new urethane foam equipment. We will continue to conduct sincere activities from raising the awareness of plant employees through the visualization of energy to avoiding use of unnecessary lights and air-conditioning.

Recycling and reducing waste

- Managing waste water disposal at our plant that neighbors Ishida River, which is a class A river, is vital. We will update our waste water filtration wing and continually work to preserve the environment.
- We will maintain a 100% recycling rate by thoroughly separating waste and encouraging recovery as valuables with the participation of everyone at the plant.

● Atmosphere: Ojima area (Voluntary values for unregulated equipment)

Substance	Equipment		Regulated value	Actual
NOx	Boiler	A	300	97
		B	300	85
		C	300	43
	Generator		950	224
Dust	Boiler	A	0.2	<0.003
		B	0.2	<0.003
		C	0.2	<0.003
	Generator		0.1	0.029

NOx units: ppm Dust units: g/m³N

● Water quality: Ojima area (Regulated values: Agreement with Ojima)

Item		Regulated value	Actual		
			Maximum	Minimum	Average
pH		6-8	7.5	6.9	—
BOD		10	9.0	<1.0	3.8
SS		10	4.0	<1.0	1.5
Oil	Animal and vegetable	3	2.4	0.3	1.2
	Mineral	3	0.6	0.1	0.2

Units: mg/ℓ

● Water quality: Ota area (Regulated values: Gunma prefectural regulations)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.8-8.6	7.8	7.3	—
BOD	40	3.0	1.0	2.1
COD	40	8.0	2.0	4.2
SS	50	3.0	<1.0	1.3
Oil	5	1.7	0.8	1.2

Units: mg/ℓ

Yokohama Plant

Location: Kanazawa-ku, Yokohama
Products: Automotive seats and interior products
Commenced operations: April 1990

Akihiko Sadahisa
Plant Manager

Outlook and policies

Our task and our conviction are to pass on to the next generation a prosperous and beautiful world. Each of our employees thinks in terms of protecting the environment when engaging in manufacturing activities. In all of our development, design and production, we will pursue possibilities in resource saving, recycling and reduction of the environmental impact through comprehensive concepts to eliminate, reduce and change. We will promote the reduction of CO_2 emissions to prevent global warming.

Fiscal 2017 and 2018 initiatives

Energy saving

- In fiscal 2017, our goals were to update old plant heating and cooling systems that used a steam boiler and reduce LNG use, and therefore, executed our plan to install high-efficiency, electric air conditioners (scheduled to update two systems per year). We updated and increased the number of multiple circuit watt meters that had aged to improve the accuracy of power monitoring and eliminate use of unnecessary electricity. We also transitioned to LED lighting in the lighting systems that needed to be renewed in transport corridors for finished products and primary safety aisles. In addition, we transitioned to motion sensing LED lighting in the entrance of the automotive seating wing.
- In fiscal 2018, we continued to systematically reduced LNG use by replacing plant heating and cooling systems (steam absorption systems) with electric air conditioners (scheduled to update two systems per year).
- We also plan to transition the automotive seating wing (meeting and greeting rooms and stairways) to LED lighting.

● Atmosphere (Regulated values: Air Pollution Control Law, Yokohama Guidelines)

Substance	Equipment	Regulated value	Actual
NOx	Boiler	0.064	0.028
Dust	Boiler	0.05	<0.002

NOx units: m^3N/h Dust units: g/m^3N

● Water quality (Regulated values: Yokohama sewage regulations)

Item		Regulated value	Actual		
			Maximum	Minimum	Average
pH		5-9	7.9	7.1	—
Oil	Animal and vegetable	30	3.0	0.3	1.2
	Mineral	5	0.7	0.1	0.2

Units: mg/ℓ

Toyota Plant

Location: Toyota, Aichi
Products: Automotive seats and interior products
Commenced operations: June 1961

Seiichi Saito
Plant Manager

Outlook and policies

Our plant is involved in production activities from the design and manufacture of automotive seat frames to the shipment of finished seating products. We conduct efficient production with net energy and promote the reduction of CO_2 while clearly understanding the impact of our business activities on the environment. We will contribute to the expansion of an affluent society by ranking the co-existence with the local community and endless preservation of the clear waters of Yahagi River as important environmental items.

Fiscal 2017 and 2018 initiatives

Energy saving

- In fiscal 2017, we were able to show magnificent results by achieving a 129% reduction against the CO_2 emissions targets initially planned through intermittent drive control of air conditioners, higher efficiency of factory exhaust motors and the transition to LED lighting.
- In fiscal 2018, we will reduce CO_2 emissions by saving energy through the transition to LED lighting as well as the renewal of existing equipment for greater efficiency. We also plan to conduct energy saving diagnostics this winter. We will actively engage in additional energy saving measures and promote environmental conservation activities.

Others

- In fiscal 2018, we plan to install a large servo press. We regularly monitor the environment while proceeding with the construction using the utmost caution to gain the understanding from the local residents.

● Water quality (Regulated values: Sewage Law)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	7.8	7.0	—
BOD	600	18.0	3.0	8.0
COD	600	45.0	11.0	20.5
SS	600	10.0	1.0	4.8
Oil	5	2.9	0.9	1.7
Zn	2	0.5	<0.2	0.3
Cu	3	<0.3	<0.3	<0.3

Units: mg/ℓ

Precision Spring & Components Division

Atsugi Plant

Location: Aikawa-machi, Aiko-gun, Kanagawa
Products: Thin leaf springs and precision stamped products
Commenced operations: November 1970

Akihiro Doui
Plant Manager

Outlook and policies

Our plant is involved in the full-scale mass production of high-efficiency drive components for environmentally-friendly electric vehicles as well as components for hybrid vehicles. In addition, as one part of our social contribution, we actively participate in activities such as the clean campaign held in Atsugi area as well as actively working to reduce waste. We respond immediately to the rapidly changing environment and legal amendments as well as engage in activities including the reduction of CO_2 emissions.

Fiscal 2017 and 2018 initiatives

Recycling

■Since fiscal 2005, we have achieved a 99.9% recycling rate and will continue to sustain that rate in the future. We have also actively worked to reduce waste and processing costs, such as furthering the recovery of valuables from waste, since last year. We will strive to reduce waste even further by collecting information through the Council for Waste Countermeasures in the Atsugi Region—where I previously worked as chairman—government agencies and relevant associations.

Reducing CO_2 emissions

■We manage our power consumption centrally and strive to understand our energy use and communicate information in a timely manner to achieve the 2% target for unit reduction compared to fiscal 2016 levels set for the entire company. We are also working to save energy united as a plant by visualizing energy consumption through monitors set up in each department.

● Water quality (Regulated values: Sewage Law)

Item		Regulated value	Actual		
			Maximum	Minimum	Average
pH		5-9	7.3	6.8	7.1
BOD		600	50	7	23
COD		—	49	11	27
SS		600	265	2.0	36
Oil	Animal and vegetable	30	16.4	2.6	6.1
	Mineral	5	1.4	0.1	0.3
Fe		10	<1	<1	<1
Total nitrogen		380	120	5	22
Fluorine		8	<0.8	<0.8	<0.8
Boron		10	<1.0	<1.0	<1.0

Units: mg/ℓ

Ina Plant

Location: Miyada-mura, Kami Ina-gun, Nagano
Products: Wire springs and precision machined components
Commenced operations: December 1943

Satoshi Tendo
Plant Manager

Outlook and policies

Starting with automobile transmissions and various wire springs for engines, our plant develop and manufacture functional products that utilize springs, as well as semiconductor testing devices that are high-quality, high-performance and take full consideration of environmental impact. We will also further global environmental conservation to the next level in the future while working to persevere the environment with everyone's participation to pass down the rich natural environment of Inadani to generations to come.

Fiscal 2017 and 2018 initiatives

Reducing CO_2 emissions

■The Ina Plant believes our mission is to pass down a richly lush natural environment to the next generation by prioritizing an environment with clean and abundant water sources and a wealth of biodiversity. We will pursue any possibility to save resources, recycle and reduce the environmental load in addition to actively adopting new technologies while everyone strives together in environmental activities to co-exist with local communities by bettering the environment.

■Especially in fiscal 2017, we were able to engage in activities that put in place hot weather measures throughout the plant by bringing in outside air as a new trial in addition to transitioning to LED lighting and disposing of kerosene boilers to reduce CO_2 emissions.

■We are promoting activities to enhance environmental awareness in each and every employee by expanding new environmental reforms that can be seen even in fiscal 2018.

● Atmosphere (Regulated values: Air Pollution Control Law)

Substance	Equipment		Regulated value	Actual
NOx	Heating boiler	A	250	62
		B	250	54
		C	250	63
Dust	Heating boiler	A	0.3	<0.002
		B	0.3	<0.002
		C	0.3	<0.003
SOx	Heating boiler	A	—	<1
		B	—	<1
		C	—	<1

NOx and SOx units: ppm Dust units: g/m³N

● Water quality (Regulated values: Sewage Law and Nagano prefectural regulations)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.7-8.7	7.6	6.9	—
BOD	600	21	5	11
COD	—	20	4	12
SS	600	13	2	7
Oil	5	3.3	0.7	1.4
Fe	10	<1.0	<1.0	<1.0
Cu	3	<0.3	<0.3	<0.3
Total nitrogen	380	61	8.5	22

Units: mg/ℓ

Disk Drive Suspension Division

Komagane Plant

Location: Komagane, Nagano
Products: HDD suspensions
Commenced operations: November 1983

Yoichi Ikeji
Plant Manager

Outlook and policies

We aim to continue to protect the environment and have an environmentally friendly plant efficiently producing the best quality HDD suspensions in the world, so that future generations can inherit our beautiful environment in good shape.

Fiscal 2017 and 2018 initiatives

Energy saving (reducing CO_2 emissions)

■In fiscal 2017, we were able to reduce CO_2 emissions 4.4% year-on-year regardless of increased production as a result of expanding reduction activities of the compressed air use of production equipment. In fiscal 2018, we will continue reduction activities of compressed air usage to further energy savings.

Waste reduction (zero emissions)

■In fiscal 2017, we maintained our 100% recycling rate in spite of an 11% increase in waste due to higher production. However, the unit consumption has been revised from the previous fiscal year. In fiscal 2018, we will continue reductions through thorough separation of waste and the ongoing promotion of the transition of waste to useful resources.

Environmental Management System (EMS)

■Our plant completed migration to the ISO 14001: 2015 in June 2018. We will endeavor to strengthen our response to risk and improve environmental performance in the future.

● Water quality (Regulated values: Nagano prefectural regulations)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.8-8.6	7.8	7.2	—
BOD	20	14.0	1.0	4.7
COD	20	11.0	1.0	4.5
SS	30	16.0	<1.0	3.1
Oil	5	1.9	0.4	1.1
Total phosphorus	16	2.7	<1.0	1.7

Units: mg/ℓ

Industrial Machinery & Equipment Division

Isehara Plant No. 1 and No. 2

Location: Isehara, Kanagawa
Products: Brazed products, pipe support systems, specialized springs, security products
Commenced operations: March 1993

Jyunichi Miyahara
Isehara Plant No. 1 Plant Manager

Tokio Sakauchi
Isehara Plant No. 2 Plant Manager

Outlook and policies

At this plant, we develop and manufacture environment-friendly advanced bonding technology products and pipe support systems for large plants, and anti-counterfeiting-related products. In addition, we will advance environmental conservation activities with everyone participating to leave a beautiful earth to the next generation.

Fiscal 2017 and 2018 initiatives

Reducing CO_2 emissions and the recycling rate

■The Isehara Plant was able to achieve a 100% recycling rate in fiscal 2017 for the 13th consecutive year while succeeding in reaching the 1% reduction target compared to fiscal 2016 in both the CO_2 unit consumption and emissions index.

Energy saving

■As initiatives for energy savings in fiscal 2018, we plan to focus on furthering the transition to LED lighting throughout the plant in addition to integrating cooling and chilling systems for the purpose of improving efficiency even more. Moreover, we will temporarily increase the number of employees to conduct education for personnel in Isehara toward the launch of a new plant in the Miyada District this fiscal year.

■We will strive in efforts so that our activities reach the same level as Isehara in preserving the environment of Miyada, such as activities for separating waste and saving energy. Under a slogan to unite everyone, we will endeavor to improve our environmental performance further.

● Water quality (Regulated values: Isehara sewage regulations)

Item		Regulated value	Actual		
			Maximum	Minimum	Average
pH		5.0-9.0	8.3	6.8	7.8
BOD		600	470	58	210
Oil	Animal and vegetable	30	13	2.0	5.0
	Mineral	5	1.0	1.0	1.0
Fe		3	0.09	0.02	0.07
Zn		1	0.11	0.04	0.07
Mn		1	0.02	0.02	0.02
Pb		0.1	0.01	0.01	0.01

Units: mg/ℓ

Komagane Plant (Chemical Products Department, Electronic Components Department)

Location: Komagane, Nagano
Products: Specialized polyurethane foam products, metal base printed wiring boards
Commenced operations: December 1981

Akira Enoki
Director, Chemical Products Department

Tatsuya Saito
Director, Electronic Components Department

Outlook and policies

The plant is located in a green and picturesque site, looking out at two of the Japan Alps. We produce functional urethane products and metal base printed wiring boards. We encourage all our employees to engage in the local environment-friendly society, in line with NHK Spring guidelines and action plans.

Fiscal 2017 and 2018 initiatives

Recycling and reducing waste

- We were able to sustain a 100% recycling rate in fiscal 2017, but the amount of waste increased 18% due to steady sales and processing costs went up 26% year-on-year as a result.
- In fiscal 2018, we will work to recover valuables from waste throughout the entire plant to reduce processing costs.

Reducing CO_2 emissions and unit consumption

- In fiscal 2017, CO_2 unit consumption decreased from the results of the previous fiscal year, but we were unable to achieve our target.
- In fiscal 2018, we will strive to restrict our energy use by furthering efficiency of production processes while continuing to control the operation of air-conditioners and boilers.

Enhanced environmental management

- In fiscal 2017, we engaged in efforts to migrate to the 2015 version of the ISO 14001.
- In fiscal 2018, we will acquire the 2015 version of the ISO and continue to maintain and surpass previous compliance with environmental laws and regulations.

● Atmosphere (Regulated values: Air Pollution Control Law)

Substance	Equipment		Regulated value	Actual
NOx	Hot water boiler	A	180	101
		B	180	38
Dust	Hot water boiler	A	0.3	<0.004
		B	0.3	<0.004
SOx	Hot water boiler	A	—	<0.001
		B	—	<0.001

NOx units: ppm SOx units: m^3N/h Dust units: g/m^3N

● Water quality (Regulated values: Nagano prefectural regulations) Production Building 1

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.8-8.6	8.2	7.6	—
BOD	20	2.0	1.0	1.5
COD	20	1.0	<1.0	<1.0
SS	30	1.0	<1.0	<1.0
Oil	5	1.6	0.4	1.0

Units: mg/ℓ

● Water quality (Regulated values: Nagano prefectural regulations) Production Building 2

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.8-8.6	7.6	6.8	—
BOD	20	20	3	13
COD	20	11	5	7
SS	30	5	<1	1.2
Oil	5	4.0	0.2	1.2
Fe	10	<1	<1	<1
Cu	3	0.3	<0.3	<0.3
NH_4	100	2.6	1.7	2.1

Units: mg/ℓ ✻Due to a temporary decrease in drainage processing capacity. Rectified

Yasu Plant (Parking Systems Department)

Location: Yasu, Shiga
Products: Mechanical multilevel parking systems
Commenced operations: October 1996

Takuo Higuchi
Director, Parking systems Department

Outlook and policies

Our plant develops and manufactures mechanical multi-story parking systems as well as other mechanical components under a slogan to reduce the impact on the environment. We aim to further protect the global environment and continue improving our care for the environment to ensure that we pass on the green mountains and clear air and rivers of these superb natural surroundings to later generations.

Fiscal 2017 and 2018 initiatives

Energy saving (reducing CO_2 emissions)

- In fiscal 2017, we continued efficient operation of power coating equipment with large energy consumption in accordance with the 100% metal plating specifications for products and gained effectiveness in CO_2 reductions.
- We will continue our activities from the previous fiscal year in fiscal 2018 and promote energy savings by adapting appropriately to changes in the production environment.
- Furthermore, we will continue to advance the transition to LED lighting at the plant and office that began in fiscal 2017 in addition to exploring energy saving options for the future.

Recycling and reducing waste

- We will carry out improved and thorough separation to maintain our 100% recycling rate.
- In fiscal 2018, we will also look for a new waste treatment contractor to promote recycling of waste into useful resources and to increase our in-house waste liquid treatment rate and reduce processing costs.

● Atmosphere (Regulated values: Air Pollution Control Law)

Substance	Equipment	Regulated value	Actual
NOx	Boiler	150	49
	Drying oven	230	32
Dust	Boiler	0.1	<0.002
	Drying oven	0.2	<0.002

NOx units: ppm Dust units: g/m^3N

● Water quality (Regulated values: Sewage Law)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	7.9	7.2	—
BOD	600	2	1	2
COD	—	5	<1.0	2
SS	600	9	1	4
Oil	5	3.4	<1.0	1.2
Ni	1	0.2	<0.1	<0.1
Total nitrogen	60	20	5	16
Total phosphorus	10	0.4	<1.0	<1.0

Units: mg/ℓ