

Building a better world by building innovative products

NHK SPRING REPORT 2019 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 Nippon 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
2018	Nov.: 29th Global Environment Forum held Dec.: Yokohama Office received Yokohama City recognition for excellence in the 3Rs (Let's Reduce, Reuse and Recycle!) (seven years in a row)	Oct.: NHK Spring Group acquired ISO14001 certification Upgrades to the 2015 version were completed at each plant	The 24th United Nations Framework Convention on Climate Change (COP24) was held The particulars (implementation policy) of the Paris Agreement were determined
2019	Jun.: The Yokohama Office received the Yokohama Global Warming Countermeasures Prize from the City of Yokohama		

Environmental education

We conduct a variety of environmental education and consciousness-raising activities to ensure that all our employees carry out their regular jobs with knowledge of the environment and a high level of awareness of the issues.

Environmental education

Raising the environmental consciousness of individual employees is important to carrying environmental work forward. Our Group has an excellent in-house training system to extend awareness of environmental issues, including a range of environmental education programs, training for internal environmental auditors, and encouragement to acquire external qualifications.

At NHK Spring, we offer different levels of education for all employees, as well as specialist training for staff with particular environmental responsibilities. General environmental education at different levels is included in our staff training program and is repeated with promotion. Specialist education is provided when staff begin new positions, and regular skill upgrading is also provided.

Furthermore, abstracts of relevant domestic environmental laws have been periodically distributed to Group companies since fiscal 2014 to share information.



Internal environmental auditor training course

■ Contents of environmental education

Education at different levels		
Recipients	Content of training	
Training for new employees		
Training for new assistant managers	Efforts by NHK Spring Group regarding global environmental issues, environmental management systems and environmental laws, regulations and other requirements	
Training for new senior staff		
Training for new executives		
Specialist education		
Recipients	Content of training	
Internal environmental auditors (Responding to ISO revision)	Training and education	Internal environmental auditor training and refresher courses
	Skills upgrading training	Environmental auditor workshops for lead auditors
Overseas secondees (expatriates)	Environmental management system, overseas environmental laws and regulations, and NHK Spring Group environmental requirements	

Environment-related qualified persons



262 people

(including multiple qualifiers)

■ Number of staff with environmental qualifications

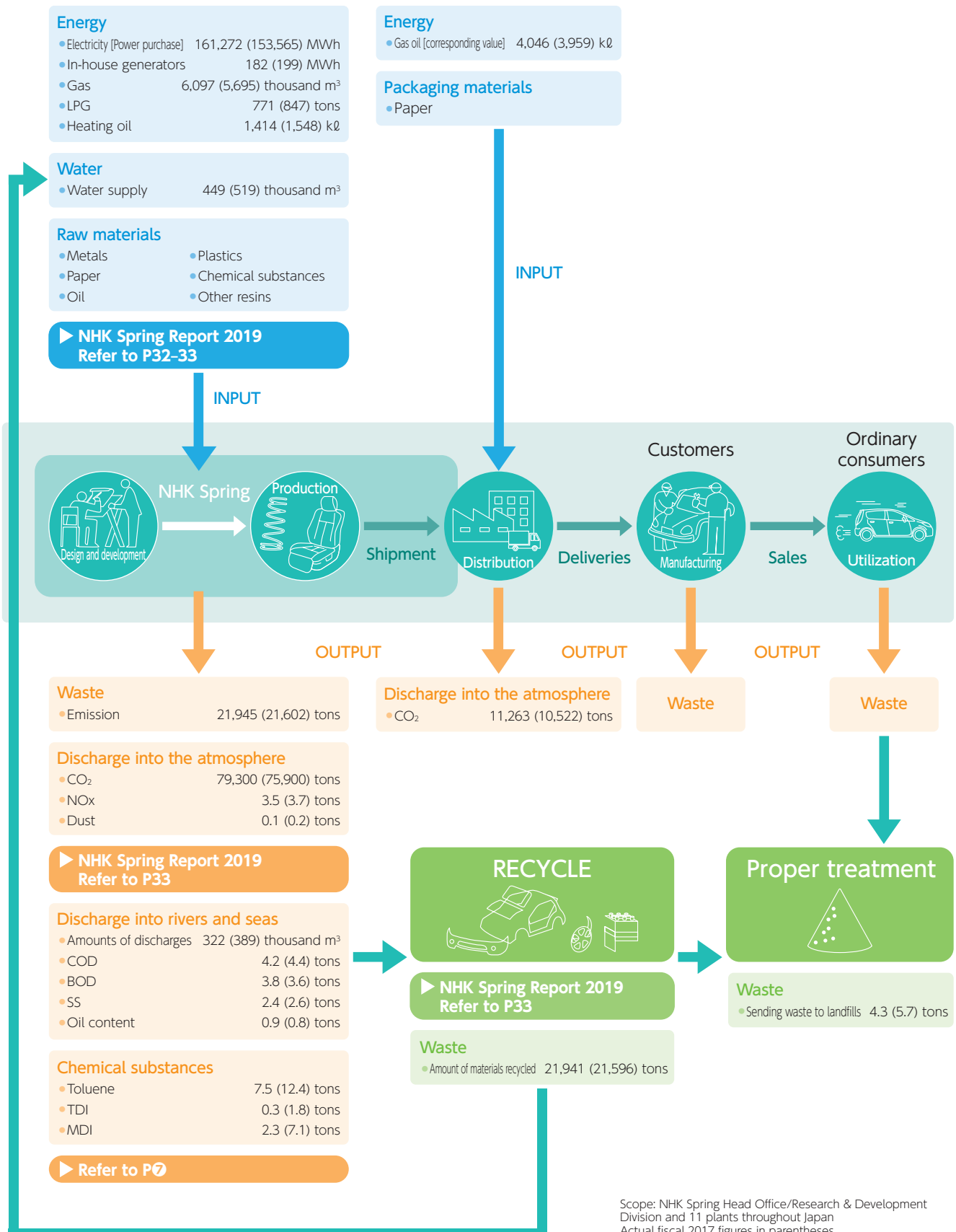
(as of June 2019)

(Units: Persons)

Qualification	Classification	Numbers holding qualifications	
Pollution prevention management	Air	Type 1	7
		Other	30
	Water quality	Type 1	7
		Other	31
	Noise		39
	Vibration		34
Dioxins		1	
Environmental management system auditors	Assistant auditor	1	
Working environment measurement experts	Type 1	Dust	5
		Special chemicals	3
		Metals	1
		Organic solvents	3
	Type 2	5	
Certified environmental measurers	Level-related	3	
Specially controlled industrial waste managers		49	
Qualified persons for energy management		34	
Energy managers for Type 2 Designated Energy Management Factories		9	

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.



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. Each NHK Spring plant that had acquired ISO14001 certification has, as of October 2018, completed its update to ISO14001 (2015). We will continue our efforts to maintain this status 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
	Isehara Plant	April 2001
Industrial Machinery & Equipment Division	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. Each of our domestic affiliates that had acquired ISO14001 certification has, as of October 2018, completed its update to ISO14001 (2015). We will continue our efforts to maintain this status 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 2019, 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

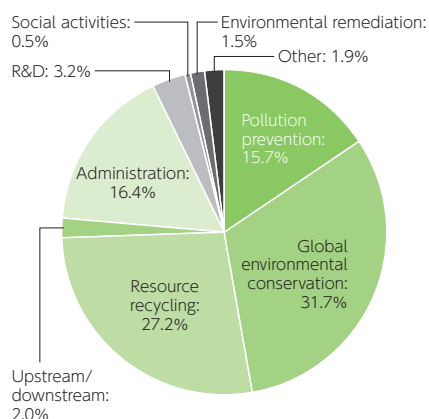
Environmental accounting

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

Fiscal 2018 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 calculate our fiscal 2018 environmental expenditure at a total of ¥712.9 million. The breakdown is shown in the table to the right. Due to a revision of various environmental activities, there have been increases from the previous fiscal year in costs associated with global environmental conservation, resource recycling and environmental damage, while there have been decreases in costs associated with research and development, pollution prevention, and other costs.



Fiscal 2018 - Cost of environmental conservation

(Units: ¥ million/year)

Classification of costs	Main elements	Value* in FY2017	Value* in FY2018
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	137.9	112.1
2) Global environmental conservation	Preservation of green areas around plants, energy-saving measures, warming prevention, etc.	194.8	226.0
3) Resource recycling	Waste treatment, zero emissions measures, office recycling, etc.	181.1	194.0
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)	16.8	14.0
5) Administration	Waste manifest management, ISO 14001 maintenance and renewal inspections and ISO 14001 office personnel costs, reporting to the government, etc.	139.8	116.7
6) R&D	Research to reduce environmental loads and development of products to contribute to reducing environmental loads	88.7	22.9
7) Social activities	Social service activities (cleaning waterways and surroundings of plants), etc.	4.1	3.4
8) Environmental remediation	Remediating environmental damage to surroundings	0.7	10.4
9) Other	Costs for environmental conservation other than the above (including handling of PCB waste treatment)	125.4	13.3
Total		889.4	712.9

* Value: Totals of Environmental Investments and Environmental Conservation



Fiscal 2018 - Cost of environmental conservation

712.9 million yen

Classification and performance of fiscal 2018 investments

Fiscal 2018 results are shown in the table below. By promoting the recycling and recovering resources from waste into usable resources, we have maintained waste landfill volumes at minimum levels since fiscal 2010. While expansion of business activities resulted in increases from the previous fiscal year in unit energy

consumption and CO₂ emissions, as well as waste recycling volume, we reduced the volume of landfill waste. 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 2018 investment effects

	Material effects*1			Economic effects*2			Assessment
	FY2017 performance	FY2018 performance	Effects	FY2017 performance	FY2018 performance	Effects	
Energy use per unit output (GJ/¥ million)*3	10.17	10.34	△ 0.17	—	—	—	×*4
CO ₂ per unit output (ton C/¥ million)*3	0.114	0.116	△ 0.002	—	—	—	△
Wastes to landfill (tons/year)	5.7	4.3	1.4	—	—	—	○
Wastes recycled (tons/year)	21,596	21,941	△ 345	—	—	—	△
Energy costs per unit output (¥/¥ thousand)*3	—	—	—	14.9	14.9	0.00	△
Gain on sales from recycling (Unit: Millions of yen)	—	—	—	503	389	△ 114	△*5

*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 Due to decrease in production efficiency *5 Due to decrease in volume of valuables

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 2018 survey of pollutant releases and transfers (April 1, 2018 - March 31, 2019)

(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	2.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0
20	2-aminoethanol	Class I	1.7	1.1	0.0	0.0	0.0	0.0	0.0	0.1	0.5
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	7.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3
71	Ferric chloride	Class I	98.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	271.3
80	Xylene	Class I	28.4	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.6
82	Silver and related water-soluble compounds	Class I	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
188	N,N-Dicyclohexylamine	Class I	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
296	1,2,4-trimethylbenzene	Class I	2.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
297	1,3,5-trimethylbenzene	Class I	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
298	Toluene diisocyanate (TDI)	Class I	873.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
300	Toluene	Class I	115.0	24.1	0.0	0.0	0.0	0.0	0.0	0.0	7.4
302	Naphthalene	Class I	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
309	Nickel compounds	Special Class I	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
384	1-Bromopropane	Class I	9.3	7.2	0.0	0.0	0.0	0.0	0.0	0.0	2.0
410	Polyoxyethylene nonylphenyl ether	Class I	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
412	Manganese and its compounds	Class I	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
448	Methylene diphenyl diisocyanate (MDI)	Class I	160.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
455	Morpholine	Class I	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total volume of PRTR substances			1304.2	60.7	0.1	0.0	0.0	0.0	0.0	0.7	285.9
Domestic Group companies											
1	Zinc compounds (water-soluble)	Class I	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	9.8
53	Ethyl benzene	Class I	28.9	25.7	0.0	0.0	0.0	0.0	0.0	0.8	0.4
66	1,2-Epoxybutane	Class I	0.6	0.6	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	68.9	58.3	0.0	0.0	0.0	0.0	0.0	1.9	0.9
87	Chromium and chromium (III) compounds	Class I	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
132	Gold and related compounds	Class I	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
185	Dichloropentafluoropropane (HCFC225)	Class I	1.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3
186	Dichloromethane	Class I	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
232	N,N-dimethylformamide	Class I	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240	Styrene	Class I	28.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
296	1,2,4-trimethylbenzene	Class I	11.6	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	120.2	118.3	0.0	0.0	0.0	0.0	0.0	0.4	0.7
302	Naphthalene	Class I	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
354	Bis (n-butyl) phthalate	Class I	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
355	Bisphthalate (2-ethylhexyl)	Class I	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
384	1-Bromopropane	Class I	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
392	Normal-hexane	Class I	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
448	Methylenebis (4.1-phenylene) = Diisocyanate (MDI)	Class I	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total volume of PRTR substances			288.5	227.8	0.0	0.0	0.0	0.0	0.0	3.3	15.7

*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 2018 and 2019 initiatives

Update to ISO14001(2015)

■ In fiscal 2018, all offices that had acquired third-party ISO14001 (2004) certification completed their updates to ISO14001 (2015). Comparable updates were carried out at all domestic and overseas affiliates, completing ISO14001 (2015) updates at all offices throughout the group. Moving forward, we will strive to respond to a broader scope of risks while improving group environmental performance through new ISO operations.

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 2018, we moved forward with waste separation recycling at the Head Office (including the Research & Development Division), reducing waste volume and cost. As a result, we were able to achieve our waste reduction and recycling targets for the Head Office.

■ During fiscal 2019, we will strive to maintain recycling (the recycling rate) at 100%, and will move forward with a higher quality of recycling in order to reduce waste volume.

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

Substance	Equipment	Regulated value			Actual
		A	B	C	
NOx	Hot water boiler	A	0.041	0.005	—
		B	0.025	0.008	—
		C	0.025	0.008	—
	Cooling water generator	A	0.029	0.003	—
		B	0.018	0.002	—
		C	0.024	0.002	—
Dust	Hot water boiler	A	0.050	<0.003	—
		B	0.050	<0.003	—
		C	0.050	<0.003	—
	Cooling water generator	A	0.050	<0.005	—
		B	0.050	<0.003	—
		C	0.050	<0.003	—

NOx units: m³/h Dust units: g/m³N

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

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	7.8	6.9	—
Oil	5	1.8	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	0.8	<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	7.5	6.8	—
Oil	5	4.7	0.1	1.0
Fe	3	0.4	<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
NH ₄	380	1.1	<0.3	0.5

Units: mg/l

Suspension Spring Division

Yokohama Plant



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



Hiroto Tsuji
Plant Manager

Outlook and policies

At this plant, our slogan is "global environment-friendly spring manufacturing." The improvements we work toward include reducing basic CO₂ unit emissions and industrial waste. As all of our personnel participate in work on continual improvement of our environmental management systems, we will work to help conserve the global environment and prevent global warming while building the environment that we hand down to the next generation.

Fiscal 2018 and 2019 initiatives

Reducing CO₂ emissions and waste

■ The steps we take in keeping with our slogan, "global environment-friendly spring manufacturing," include reductions in CO₂ emissions and industrial waste. At the same time, we take environmental management action as part of TPM activities so that our spring plant personnel all pull together, aiming high in environmental management through daily activities.

■ We implemented CO₂ emissions reduction measures in fiscal 2018, including conversion to LED plant lighting, upgrades to plant air compression, pressure control system overhaul and full inspections for air leakage sites, as well as enhancement of furnace wall insulation (heat insulation coatings) to reduce the amount of combustion gas used.

■ During fiscal 2019, we will pursue further energy conservation by taking different approaches, while also working to reduce industrial waste volume in our efforts to achieve "global environment-friendly spring manufacturing."

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

Substance	Equipment	Regulated value		Actual
		A	B	
NOx	Metal reheating furnace	A	0.128	0.049
		B	0.110	0.018
		C	0.212	0.049
		D	0.169	0.073
		E	0.119	0.020
	Metal tempering furnace	A	0.202	0.017
		B	0.123	0.002
		C	0.104	0.025
		D	0.085	0.009
		E	0.059	0.003
Dust	Metal reheating furnace	A	0.1	<0.002
		B	0.1	0.007
		C	0.1	<0.002
		D	0.1	<0.002
		E	0.1	<0.002
	Metal tempering furnace	A	0.1	<0.006
		B	0.1	<0.003
		C	0.1	<0.003
		D	0.1	<0.004
		E	0.1	<0.003

NOx units: m³/h Dust units: g/m³N

● Water quality (Regulated values: Yokohama sewage regulations)

Item	Regulated value	Actual			
		Maximum	Minimum	Average	
pH	5-9	7.7	6.9	—	
Oil	Animal and vegetable	30	4.3	1.3	2.1
	Mineral	5	0.6	0.1	0.2
Fe	3	<0.3	<0.3	<0.3	
Zn	1	<0.1	<0.1	<0.1	
Ni	1	0.9	0.2	0.5	
Mn	1	0.2	<0.1	<0.1	
Fluorine	8	2.3	<0.8	<0.8	
Boron	10	<1.0	<1.0	<1.0	
Total nitrogen	240	153	31	72	
Total phosphorus	32	4.3	2.0	2.9	
NH ₄	380	110	32	57	

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 2018 and 2019 initiatives

Energy saving

- In fiscal 2018, we continued activities such as inspections of air leaks and closing of control panel power circuit breakers. We reduced the use of electricity by furthering the change of fluorescent lights to LED lighting at plants in all regions including the change to LED lighting on the SC-2 ceilings of the No. 1 Plant (98 lights). We also achieved reductions in the volume of gas used through insulation of the external surfaces of gas heat treatment furnaces. Moreover, we see the management to sustain the water quality of waste water at our plants that rely on Lake Biwa as vital and have been working at global environmental conservation, including the update of aeration stacks in waste water treatment facilities.
- In fiscal 2019, we will pursue further CO₂ reductions through ongoing energy conservation efforts that include gas furnace surface insulation and heat space reduction, compressor energy conservation, etc. We will also move forward with action to protect the global environment by working to reduce industrial waste and by continuing with activities to reduce sludge volume.

● Atmosphere (Regulated values: Air Pollution Control Law)

Substance	Equipment		Regulated value	Actual
NOx	Metal reheating furnace	A	180	68
		B	180	36
		C	180	30
		D	180	61
		E	180	45
Dust	Metal reheating furnace	A	0.25	<0.006
		B	0.20	<0.003
		C	0.20	<0.004
		D	0.20	<0.002
		E	0.20	<0.012

NOx units: ppm Dust units: g/m³N

● Water quality (Regulated values: Agreement with Koka)

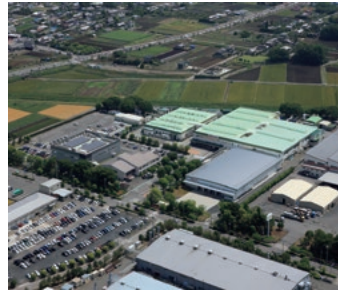
Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	6-8.5	7.5	6.8	—
BOD	30	<1.0	<1.0	<1.0
COD	30	2.0	<1.0	<1.0
SS	70	5.0	<1.0	<1.0
Oil	5	1.9	0.2	1.0
Total nitrogen	12*	9.8	<1.0	4.7
Total phosphorus	1.2*	0.7	<0.1	<0.1
Fluorine	8*	<0.8	<0.8	<0.8
Boron	10*	<1.0	<1.0	<1.0
Zn	1*	<0.1	<0.1	<0.1

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

In order to reduce CO₂ emissions volume from production activity at this plant, we will comprehensively promote activities based on NHK's own concept of elimination, reduction and change. We aim to be a factory that puts the local community first as we work to enrich society as a whole through a tripartite policy orientation in which we pursue technology, locally rooted operations, and partnership with society.

Fiscal 2018 and 2019 initiatives

Energy saving

- During fiscal 2018, we converted office building lighting to LED in accordance with our medium-term plan. We also worked on achieving greater energy efficiency by updating of facilities with high rates of air dryer operation.
- During fiscal 2019, we will undertake to reduce overall plant energy consumption by about 15% due to the increase in production efficiency accompanying the migration from old to new urethane foam facilities. We will also be upgrading from old equipment such as air conditioners and compressors to new high-efficiency products.

Recycling and reducing waste

- During fiscal 2019, we will extend industrial waste reduction activities throughout the lifecycle. We have maintained a 100% recycling rate through participation by all personnel in a thoroughgoing program of waste separation and promotion of useful resource reclamation.

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

Substance	Equipment	Regulated value	Actual
NOx	Generator	950	176
Dust	Generator	0.1	0.028

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	7.6	6.6	—	
BOD	10	9.0	<1.0	3.5	
SS	10	5.0	<1.0	1.8	
Oil	Animal and vegetable	3	2.8	0.4	1.0
	Mineral	3	0.4	<0.3	0.2

Units: mg/l

● Water quality: Ota area (Voluntary regulatory values)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.8-8.6	8.0	7.1	—
BOD	40	4.0	2.0	2.7
COD	40	9.0	2.0	4.9
SS	50	14.0	<1.0	2.7
Oil	5	3.4	0.1	1.2

Units: mg/l

Seating Division

Yokohama Plant



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



Chihaya Yamamoto
 Plant Manager

Outlook and policies

We will obtain an accurate understanding of the effects this factory's operational activities exert on the global environment, specify environmental goals, and manage progress as we make continual improvements in environmental performance. We will pursue the potential of resource conservation, recycling and environmental impact reduction by comprehensively promoting activities based on NHK's own concept of elimination, reduction and change while helping to prevent global warming. In this endeavor, we will work to reduce CO₂ emissions volume, help stop environmental pollution and environmental conservation.

Fiscal 2018 and 2019 initiatives

Energy saving

■ We converted to small electric boilers for urethane mold maintenance steam before fiscal 2018. This enabled us to eliminate wasteful heat loss by disconnecting the steam piping from the large LNG boiler that previously traversed the plant diagonally. In fiscal 2018, the heat source for producing circular urethane line temperature control water was also converted to electric boiler equipment, and we also succeeded in eliminating operation of steam-absorption refrigerators during seasons when air conditioning is not required. We have also been progressing as needed with conversion to electric air conditioning, which excels in operating with reduced CO₂ emissions. In order to produce even better results in fiscal 2019, we are aiming to completely cease boiler operation during night hours through the adoption of electric air conditioning prioritizing two-shift operational processes. Planning is currently under way. Having introduced waste separation education, we are maintaining a 100% rate of recycling and recovering resources from waste.

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

Substance	Equipment	Regulated value	Actual
NOx	Boiler	0.064	0.023
Dust	Boiler	0.05	<0.003

NOx units: m³N/h Dust units: g/m³N

● Water quality (Regulated values: Yokohama sewage regulations)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	7.8	6.9	—
Oil				
Animal and vegetable	30	5.2	0.1	1.2
Mineral	5	1.0	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 CO₂ 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 2018 and 2019 initiatives

Energy saving

■ During fiscal 2018, we implemented measures to eliminate air leaks and conserve energy through greater efficiency by converting factory lighting to LED illumination, replacing aging air conditioning equipment and upgrading compressors. Having completed the conversion of factory lighting to LED illumination as outlined in our medium- to long-term plan, we have reduced CO₂ emissions by a total of 270 tons over seven years.

■ During fiscal 2019, we plan to upgrade the air conditioning equipment that was in use when our employee welfare facilities were first built, as well as the wastewater processing plant. We will engage in activities to protect the environment through our energy conservation measures and by maintaining and managing wastewater quality.

Education

■ We will update the training hall for safety, quality and environment that we have been using up to now as a venue for personnel training. Plans call for establishing more experiential training, as well as comprehensive training for rules compliance and skills enhancement.

● Water quality (Regulated values: Sewage Law)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	7.8	7.1	—
BOD	600	22.0	1.0	5.0
COD	600	48.0	4.0	17.5
SS	600	12.0	1.0	5.1
Oil	5	2.8	0.5	1.3
Zn	2	0.3	<0.2	<0.2
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 produces high-efficiency drive components for environmentally-friendly electric vehicles as well as components for hybrid vehicles. We will respond proactively to rapidly changing circumstances and legal amendments while exchanging information with related organizations such as the Council for Waste Countermeasures in the Atsugi Region. Our plants will pull together in a unified effort to reduce waste and CO₂ emissions.

Fiscal 2018 and 2019 initiatives

Recycling, recovering resources and CO₂ reduction

- Since 2005, we have achieved a resource recycling and recovery rate of 99.9%, and will continue these efforts into the future. We are also working proactively to reduce waste volume and processing costs by recycling and converting waste into usable resources.
- In order to achieve our goal of a 3% reduction in basic CO₂ unit emissions compared to fiscal 2016, we are working to achieve a timely understanding of and response to electric power usage by bringing visibility to demand through the implementation of centralized management of electric power.

CSR compliance and environmental impact reduction efforts

- Our CSR compliance activities include gathering information from administrative bodies and other related organizations, such as the Council for Waste Countermeasures in the Atsugi Region, to achieve CSR as we aim to make the Atsugi Plant more earth-friendly.
- In addition, when adopting new facilities or equipment, we conduct prior environmental impact evaluations and strive to reduce any resulting burden on the environment.

Water quality (Regulated values: Sewage Law)

Item	Regulated value	Actual			
		Maximum	Minimum	Average	
pH	5-9	7.5	7.0	—	
BOD	600	52	5	21	
COD	—	42	15	24	
SS	600	188	1.0	41	
Oil	Animal and vegetable	30	10.5	2.0	7.0
	Mineral	5	4.2	0.1	0.3
Fe	10	<1	<1	<1	
Total nitrogen	380	34	8	20	
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

At the Ina Plant, situated as we are amid an abundance of diverse natural ecosystems and a wealth of pure water, we see it as our mission to hand down a richly verdant natural environment to future generations. We actively adopt new technologies, and through environment-related improvements, we undertake efforts in which all personnel participate in activities together with the local community.

Fiscal 2018 and 2019 initiatives

Reducing CO₂ emissions

- At the Ina Plant, we converted to LED lighting and installed exhaust fans to expel hot interior air and counter the summer heat, measures which are part of environmental improvement activities through which we are reducing electric power use and CO₂ emissions volume. In particular, the environmental improvement measure in which we eliminated reliance on air conditioning by using exhaust fans has reduced maximum summer plant interior air temperature by approximately 4°C. It has also eliminated the physical toll that air conditioning takes on the body, making this an environmental and health improvement that is kind to both people and the earth.
- At the No. 2 Ina Plant newly constructed in Ina City, we will endeavor to be a leader in the NHK Spring Group's environmental improvement effort. We will do this by generating new electric power in experimental projects in fields of power generation that go beyond reducing electric power consumption and using solar panels for electricity.

Atmosphere (Regulated values: Air Pollution Control Law)

Substance	Equipment		Regulated value	Actual
NOx	Heating boiler	A	250	61
		B	250	53
		C	250	56
Dust	Heating boiler	A	0.3	<0.003
		B	0.3	<0.003
		C	0.3	<0.003
SOx	Heating boiler	A	—	<0.001
		B	—	<0.001
		C	—	<0.001

NOx units: ppm SOx units: m³N/h 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	6.6	—
BOD	600	46	5	14
COD	—	34	7	16
SS	600	33	5	14
Oil	5	3.8	0.7	2.1
Fe	10	<1.0	<1.0	<1.0
Cu	3	<0.3	<0.3	<0.3
Total nitrogen	380	13	2	7

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 2018 and 2019 initiatives

Energy saving (reducing CO₂ emissions)

- During fiscal 2018, major improvements resulted from previous years' efforts to reduce the volume of air used in production facilities. Production volume saw a 15.7% year-on-year increase as CO₂ emissions were reduced by 2.2%.
- During fiscal 2019, we will enhance energy visibility while further reducing CO₂ emissions through various improvement efforts.

Waste reduction (zero emissions)

- We continue to maintain our 100% resource recycling rate and to meet our emissions index numerical targets. Restrictions imposed by China on waste plastic imports last year will create an even harsher environment during fiscal 2019, but we will respond with thoroughgoing waste separation and other adaptations toward meeting our targets.

Water quality (Regulated values: Nagano prefectural regulations)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.8-8.6	7.9	7.2	—
BOD	20	6.0	1.0	3.3
COD	20	10.0	<1.0	4.7
SS	30	6.0	<1.0	3.0
Oil	5	1.3	0.2	0.8
Total phosphorus	16	7.2	<1.0	2.4

Units: mg/l

Industrial Machinery & Equipment Division

Isehara Plant No. 1 and No. 2



Location: Isehara, Kanagawa
Products: Semiconductor process components, 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 our plant, we will continue to develop and manufacture environmentally friendly sophisticated joint technology products, TERA high-stress disc springs used in machine tools, and anti-counterfeiting products. We will work to improve environmental performance by having all of our personnel participate in 3R efforts including conservation of resources and energy, and reduction of waste and substances with environmental impact.

Fiscal 2018 and 2019 initiatives

Reducing CO₂ emissions and the recycling rate

- During fiscal 2018, we did not manage to meet our target of reducing basic CO₂ unit emissions by 2% compared to fiscal 2016. This was because of a decrease in production efficiency resulting from an increase in personnel in response to increased production, as well as the allocation of personnel at the Miyada Plant to personnel training duties. We did, however, succeed in meeting our goal of a 2% emissions index reduction relative to fiscal 2016. We have maintained a 100% resource recycling rate for 14 consecutive years.

Energy saving

- Energy conservation efforts planned for fiscal 2019 include conversion to LED lighting in offices, dining halls and conference rooms, as well as further improvements in production processes. We intend to further increase our awareness of waste separation, and to promote 3R efforts in which all personnel participate.

Water quality (Regulated values: Isehara sewage regulations)

Item	Regulated value	Actual			
		Maximum	Minimum	Average	
pH	5.0-9.0	8.6	7.2	8.3	
BOD	600	430	83	180	
Oil	Animal and vegetable	30	29	3.0	10.0
	Mineral	5	<1.0	<1.0	<1.0
Fe	3	0.02	0.08	0.04	
Zn	1	0.12	0.05	0.08	
Mn	1	0.02	0.02	0.02	
Pb	0.1	0.01	0.01	0.01	

Units: mg/l

Industrial Machinery & Equipment Division

Komagane Plant (Chemical Products Department, Electronic Components Department)



Location: Komagane, Nagano
Products: Specialized polyurethane foam products, Integrated metal products:
December 1981



Akira Enoki
Director, Chemical Products Department



Tatsuya Saito
Director, Electronic Components Department

Outlook and policies

As a part of organizational changes effective from April 2019, we are becoming the Industrial Machinery & Equipment Production Division, Komagane Plant. Situated amid verdant scenery with a view of both the Central and Southern Alps, this plant develops and produces functional urethane products and metal substrates. We promote efforts that involve all employees in working to foster a recycling society rooted in the local community in keeping with NHK Spring guidelines and action plans.

Fiscal 2018 and 2019 initiatives

Recycling and reducing waste

- In fiscal 2018, we not only achieved our basic CO₂ unit emissions goal, but cleared the target by 11%.
- Although we will face increased energy use during fiscal 2019 due to production plant relocation, we will strive to curb energy consumption without relaxing our numerical targets.

Reducing CO₂ emissions and unit consumption

- In fiscal 2018, we maintained a 100% recycling rate. However, waste volume increased by 14% from the previous fiscal year, while processing costs increased by 21% in line with sales growth.
- During fiscal 2019, the whole plant operation will undertake efforts to reclaim useful resources from waste in order to cut processing costs.

Enhanced environmental management

- We shifted to the 2015 ISO version in fiscal 2018, and began operating accordingly.
- During fiscal 2019, we will continue to comply with and uphold environmental laws and regulations and to partner with the Miyada Plant as we do so.

● Atmosphere (Regulated values: Air Pollution Control Law)

Substance	Equipment	Regulated value	Actual
NOx	Hot water boiler	A	180
		B	37
Dust	Hot water boiler	A	180
		B	32
SOx	Hot water boiler	A	0.3
		B	<0.003
		A	0.3
		B	<0.003
		A	—
		B	<0.001

NOx units: ppm SOx units: m³/h Dust units: g/m³N

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

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5.8-8.6	8.4	7.7	—
BOD	20	4.0	1.0	2.0
COD	20	1.0	<1.0	<1.0
SS	30	1.0	<1.0	<1.0
Oil	5	1.6	0.3	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	19	2	13
COD	20	12	3	8
SS	30	4.0	<1	1.3
Oil	5	3.3	0.5	1.1
Fe	10	<1	<1	<1
Cu	3	0.7	<0.3	<0.3
NH ₄	100	2.6	0.9	1.7

Units: mg/l

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 2018 and 2019 initiatives

Energy saving (reducing CO₂ emissions)

- The adoption in fiscal 2018 of specifications for product plating was accompanied by a revision of operating methods of operating shot-blast machinery used on H-section steel columns, a major consumer of electric power. Keeping the operation of this equipment to the minimum necessary resulted in CO₂ reduction.
- During fiscal 2019, we will continue our efforts of fiscal 2018 to promote energy conservation as we adapt appropriately to changes in the production environment.
- We will explore energy conservation proposals for the future while also moving forward with our ongoing conversion of plant lighting to LED illumination.

Recycling and reducing waste

- We will carry out improved and thorough separation to maintain our 100% recycling rate.
- This fiscal year, 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	45
	Drying oven	230	28
Dust	Boiler	0.1	<0.003
	Drying oven	0.2	<0.003

NOx units: ppm Dust units: g/m³N

● Water quality (Regulated values: Sewage Law)

Item	Regulated value	Actual		
		Maximum	Minimum	Average
pH	5-9	8.0	7.4	—
BOD	600	2.0	1.0	1.3
SS	600	11	3	6
Oil	5	1.9	<1.0	0.9
Ni	1	0.2	<0.1	<0.1
Total nitrogen	60	26	13	18
Total phosphorus	10	1.3	<1.0	<1.0

Units: mg/l