



JFE Group CSR REPORT 2018

Environmental Data Book

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JFE Group

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(Ministry of the Environment, Japan)

This book contains supplemental information and data relating to environmental measures for three JFE Group companies, as well as information and data relating to the JFE Group's recycling business.

Please read this book in conjunction with the "JFE Group CSR Report 2018" to gain a more comprehensive understanding of JFE's environmental initiatives.



Reporting Period

FY2017 (April 1, 2017 to March 31, 2018)

Organizations Covered

1. JFE Holdings, Inc. and its operating companies:

- JFE Steel Corporation
- JFE Engineering Corporation
- JFE Shoji Trade Corporation

2. The following items include data from "Major consolidated subsidiaries and equity-method affiliates included in the Scope of Reporting" listed below.

Environmental data aggregation scope

- Status of ISO 14001 certification
- CO₂ emissions
- Energy consumption (JFE Steel Group, JFE Engineering Group)
- SO_x, NO_x emissions (JFE Steel Group)
- Amount of industrial water received (JFE Steel Group)
- Water Consumption (JFE Engineering Group)
- COD (JFE Steel Group, JFE Engineering Group)
- Release or Transfer of PRTR-registered Substances (JFE Steel Group)
- VOC emissions (JFE Steel Group)

• JFE Steel Group

JFE Steel Corporation and 29 consolidated subsidiaries (total: 30 companies)

25 domestic companies

JFE MINERAL COMPANY, LTD., Mizushima Ferroalloy Co., Ltd., JFE Material Co., Ltd., CHIBA RIVERMENT AND CEMENT CORP., MIZUSHIMA RIVERMENT CORP., JFE PRECISION CORPORATION, JFE Plastic Resource Corporation, JFE Bars & Shapes Corporation, JFE Metal Products & Engineering Inc., JFE Galvanizing & Coating Co., Ltd., JFE Container Co., Ltd., JFE Welded Pipe Manufacturing Co., Ltd., JFE Steel Pipe Co., Ltd., Galvatec Corporation, JFE Pipe Fitting Mfg. Co., Ltd., JFE Techno-wire Corporation, JFE Kozai Corporation, JFE LOGISTICS CORPORATION, JFE Chemical Corporation, JFE LIFE CORPORATION, GECOSS CORPORATION, JFE ROCKFIBER CORPORATION, JFE KENZAI FENCE CO., LTD., J-Logitec Co., Ltd., K-PLASHEET CORPORATION

4 overseas companies

Nova Era Silicon, JFE Steel Galvanizing (Thailand) Ltd., Thai Coated Steel Sheet Co., Ltd., Philippine Sinter Corporation

• JFE Engineering Group

JFE Engineering Corporation and 10 domestic consolidated subsidiaries (total: 11 companies)

JFE KANKYO Corporation, JFE Environment Service Corporation, NORTHERN JAPAN MACHINERY Corporation, Tohoku Dock Ironworks Corporation, JFE AQUA MACHINE AND SERVICE Corporation, Fujikako, Inc., Asuka Soken Co., Ltd., JFE Pipeline Engineering Corporation, JFE Technos Corporation, J Farm Corporation

• JFE Shoji Trade Group

JFE Shoji Trade Corporation and the following 34 domestic and overseas consolidated subsidiaries (steel-processing companies) (total: 35 companies)

20 domestic subsidiaries

JFE Shoji Electrical Steel Co., Ltd.* JFE Shoji Coil Center Corporation, JFE Shoji Kohnan Steel Center Co., Ltd., JFE Shoji Tinplate Center Corporation, Aichi Kanzai Kogyo Corporation, Osaka Steel Corporation, Kyusyu-Tech Corporation, JFE Shoji Kohnan Steel Center Co., Ltd. Shin Nihon Kogyo Corporation, Taisei Kogyo Corporation, Toyo Kinzoku Corporation, Tochigi Shearing Corporation, Naigai Steel Corporation, Nagano Can Corporation, Niigata Steel Corporation, Nihon Jiseizai Kogyo Co., Ltd., Hokuriku Kogyo Corporation, Hokuriku Steel Co., Ltd., Mizushima Steel Corporation, Mizushima Metal Products Corporation

*The data was collected as JFE Steel Group before FY 2016

14 overseas subsidiaries

Dongguan JFE Shoji Steel Products Co., Ltd., Guangzhou JFE Shoji Steel Products Co., Ltd., Zhejiang JFE Shoji Steel Products Co., Ltd., Jiangsu JFE Shoji Steel Products Co., Ltd., JFE SHOJI STEEL PHILIPPINES, INC., CENTRAL METALS (THAILAND) LTD., STEEL ALLIANCE SERVICE CENTER CO., LTD., JFE SHOJI STEEL VIETNAM CO., LTD., JFE SHOJI STEEL HAI PHONG CO., LTD., JFE SHOJI STEEL MALAYSIA SDN. BHD., PT. JFE SHOJI STEEL INDONESIA, JFE SHOJI STEEL INDIA PRIVATE LIMITED, VEST INC., JFE SHOJI STEEL DE MEXICO, S.A. DE C.V.

Organizational Profile

JFE Steel

JFE Steel Corporation

- Head office: 2-2-3 Uchisaiwaicho, Chiyoda-ku, Tokyo 100-0011
- Phone: +81-3-3597-3111
- Net sales (consolidated): 2,715.4 billion yen
- Employees (consolidated): 44,554

Main Works



East Japan Works (Chiba District)

1 Kawasaki-cho, Chuo-ku, Chiba-shi, Chiba 260-0835
Phone: +81-43-262-2024 Fax: +81-43-262-2967

• Main business

Production of hot rolled sheets and strips, cold rolled sheets and strips, stainless steel sheets and strips, coated sheets, UOE pipes, iron powders and solvents.



West Japan Works (Kurashiki District)

1 Mizushima Kawasaki-dori, Kurashiki-shi, Okayama 721-8511

Phone: +81-86-447-2020 (main)

+81-86-447-2102 (visitor center reception desk)

Fax : +81-86-447-2131

• Main business

Production of hot rolled sheets, cold rolled sheets, coated sheets, electrical sheets, plates, sheet piles, H-shapes, rails, bars, wire rods and UOE pipes.



East Japan Works (Keihin District)

1-1 Ohgishima, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-0868

Phone: +81-44-322-1111 Fax: +81-44-322-1500

• Main business

Production of plates, hot rolled sheets, cold rolled sheets, galvanized steel sheets, high-performance steel sheets, seamless steel pipes and welded steel pipes.



West Japan Works (Fukuyama District)

1 Kokan-cho, Fukuyama-shi, Hiroshima 721-8510

Phone: +81-84-945-3118 Fax: +81-84-945-3808

• Main business

Production of hot rolled sheets, cold rolled sheets, coated sheets, electrical sheets, plates, sheet piles, H-shapes, rails, bars, wire rods and UOE pipes.



Chita Works

1-1 Kawasaki-cho, Handa-shi, Aichi 475-8611

Phone (for general): +81-569-24-2101 Fax: +81-569-24-2022

• Main business

Production of machine structural steel pipes, automotive steel pipes, material pipes, general structural steel pipes and steel pipes for plumbing.



Sendai Works

6-1 Minato Miyagino-ku, Sendai-shi, Miyagi 983-0001

Phone: +81-22-258-5511 Fax: +81-22-258-5540

• Main business

Production of bars (rounds and bars in coil), wire rods and other products

Note: The Sendai Works' environmental data is included in that of JFE Bars & Shapes Corporation

JFE Engineering

JFE Engineering Corporation

- Tokyo head office: Marunouchi Trust Tower North 19F, 1-8-1 Marunouchi, Chiyoda-ku, Tokyo 100-0005
- Phone: +81-3-6212-0800 (main) Fax: +81-3-6212-0802
- Yokohama head office: 2-1, Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-8611
- Phone: +81-45-505-7435 (main) Fax: +81-45-505-8902 Phone: +81-45-505-8953 (PR)
- Net sales (consolidated): 391.3 billion yen
- Employees (consolidated): 9,307

Main Works



Tsurumi Engineering and Manufacturing Center

2-1 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-8611

Phone: +81-45-505-7435 Fax: +81-45-505-8902

• Main business

Production of engines, shield tunneling machines, boilers and turbines, water facilities.



Tsu Works

1 Kumozu-kokan-cho, Tsu-shi, Mie 514-0393

Phone: +81-59-246-2010 Fax: +81-59-246-2792

• Main business

Production of steel structures such as bridges, harbor structures and building steel frames.

JFE Shoji Trade

JFE Shoji Trade Corporation

- Tokyo head office: Otemachi Financial City North Tower, 1-9-5 Otemachi, Chiyoda-ku, Tokyo 100-8070
- Phone: +81-3-5203-5053 Fax: +81-3-5203-5289
- Osaka head office: Dojima Avanza, 1-6-20, Dojima, Kita-ku, Osaka 530-8318
- Phone: +81-6-4795-7011 Fax: +81-6-4795-7400
- Net sales (consolidated): 1,907.9 billion yen
- Employees (consolidated): 7,333

JFE Group

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

Status of ISO 14001 Certification

All JFE Steel and JFE Engineering production sites and JFE Shoji Trade domestic business offices have received certification. The status of certification for Group companies are as follows.

List of ISO 14001 Certified Companies (includes certification limited to certain sites of a company)

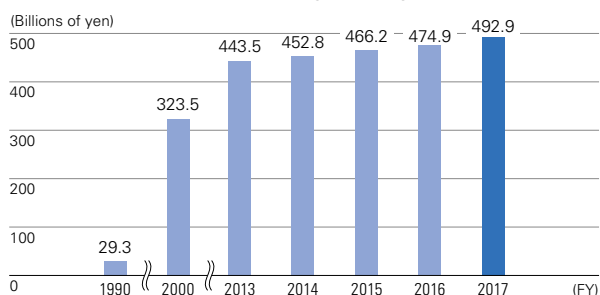
JFE Steel Corporation	JFE MINERAL COMPANY, LTD.	SHINAGAWA REFRACTORIES CO., LTD.*1 *2
	Mizushima Ferroalloy Co., Ltd.	JFE LOGISTICS CORPORATION
	JFE Material Co., Ltd.	JFE Techno-Research Corporation (JFE-TEC)*1
	JFE Plastic Resource Corporation	JFE Chemical Corp.
	JFE Bars & Shapes Corporation	JFE Metal Construction Inc.*1
	JFE Metal Products & Engineering Inc.	JFE KYOWA YOKI CO. LTD
	JFE Galvanizing & Coating Co., Ltd.	Japan Pail Corporation
	JFE Container Co., Ltd.	JFE SETOUCHI LOGISTICS CORPORATION
	JFE Welded Pipe Manufacturing Co., Ltd.	Guangzhou JFE Steel Sheet Co., Ltd.*2
	JFE Pipe Fitting Mfg. Co., Ltd.	Thai Coated Steel Sheet Co., Ltd.
	DAIWA KOHTAI CO. Ltd*1	Philippine Sinter Corporation
	JFE Plant Engineering Co., Ltd.*1	
JFE Engineering Corporation	JFE KANKYO Corporation	Fujikako, Inc.
	JFE Aqua Machine and Service Corporation*1	Asuka Soken Co., Ltd.
JFE Shoji Trade Corporation	JFE Shoji Coil Center Corporation	JFE Shoji Business Support, Inc.*1
	JFE Shoji Kohnan Steel Center Co., Ltd.	JFE Shoji Trade Matech Inc.*1
	Taisei Kogyo Corporation	Kawasho Foods Corporation*1
	Toyo Kinzoku Corporation	K&I Tubular Corporation*1
	Naigai Steel Corporation	Tohsen Corporation*1
	Nihon Jiseizai Kogyo Co., Ltd.	Hoshi Kinzoku Corporation*1
	Hokuriku Steel Co., Ltd.	Dongguan JFE Shoji Steel Products Co., Ltd.
	Mizushima Steel Corporation	Guangzhou JFE Shoji Steel Products Co., Ltd.
	Mizushima Metal Products Corporation	Jiangsu JFE Shoji Steel Products Co., Ltd.
	JFE Shoji Electrical Steel Co., LTD.	Zhejiang JFE Shoji Steel Products Co., Ltd.
	JFE Shoji Usuitakenzai Corporation*1	JFE SHOJI STEEL PHILIPPINES, INC.
	JFE Shoji Electronics Corporation*1	CENTRAL METALS (Thailand) Ltd.
	JFE Shoji Pipe & Fitting Trade Corporation*1	JFE SHOJI STEEL VIETNAM CO., LTD.
	JFE Shoji Service Corporation*1	JFE SHOJI STEEL HAI PHONG CO., LTD.
	JFE Shoji Machinery & Materials Corporation*1	JFE SHOJI STEEL MALAYSIA SDN. BHD.
	JFE Shoji Trade Steel Construction Materials Corporation*1	PT. JFE SHOJI STEEL INDONESIA
	JFE Shoji Terre One Corporation*1	JFE SHOJI STEEL DE MEXICO, S.A. DE C.V.

*1 Outside the scope of environmental data aggregation *2 Equity method affiliates

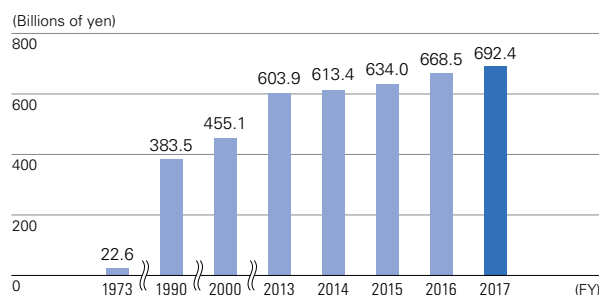
JFE Group's Environmental Accounting

◆ Environmental Accounting

Cumulative Investment in Energy Saving



Cumulative Investment in Environmental Preservation Measures



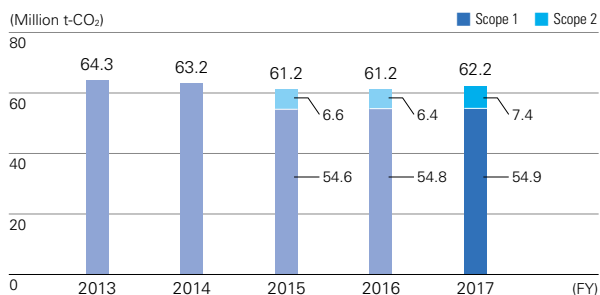
Breakdown of Environmental Costs

Main Items		FY2016		FY2017	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	0.1	2.4	0.2	2.5
Global warming countermeasures	Saving and efficiently use energy	8.8	29.5	18.0	27.8
Conservation of natural resources	Recycling industrial water	2.0	17.4	2.8	17.1
	Recycling and waste management of internally generated materials, etc.	0.03	5.1	0.09	5.3
Environmental protection	Air pollution countermeasures	27.2	36.8	19.1	35.6
	Water pollution countermeasures	4.6	9.7	1.6	9.2
	Prevention of soil contamination, noise, vibration and subsidences	0.5	0.8	0.02	0.7
Other	Charges, etc.	-	1.4	-	1.4
R&D	Technologies for protecting the environment, saving energy and preventing global warming	1.2	12.6	1.4	11.7
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions and public relations	-	0.7	-	0.7
Total		44.4	116.4	43.3	112.1

Note: Data cover all investment activities of JFE Steel Corporation and R&D activities of JFE Engineering Corporation.

CO₂ Emissions of the JFE Group

CO₂ Emissions of the JFE Group



Note: The scope is corrected retroactively to the past fiscal years to ensure uniformity across all fiscal years.

CO₂ Emission Factor for Purchased Electricity

- JFE Steel uses the emission factor of the Low-Carbon Society Action Plan of the Japan Iron and Steel Federation for energy purchased in FY2017.
- JFE Engineering Group and JFE Shoji Trade Group use the unadjusted emission factors of each electric power company for each fiscal year.
- JFE Steel Group companies, excluding JFE Steel, use the CO₂ equivalent of 0.000512 (t-CO₂/kWh) for the FY2016 unadjusted emission factors of each electric power company.
- Overseas: based on each country's GHG protocol

CO₂ Emissions of the JFE Group

JFE Steel	JFE Engineering	JFE Shoji Trade
62,147 thousand t-CO ₂	57 thousand t-CO ₂	35 thousand t-CO ₂
99.85%	0.09%	0.06%

Notes: Data cover 75 companies, including JFE Steel and 29 major domestic and overseas subsidiaries, JFE Engineering and 10 major domestic subsidiaries, and JFE Shoji Trade and 33 major domestic and overseas subsidiaries. JFE Steel emissions include CO₂ emissions from non-energy sources. Data for certain fiscal years have been recalculated retroactively for improved accuracy.

Scope 3 Emissions of the JFE Group

Category	CO ₂ Emissions (1,000 t-CO ₂)		Calculation Method
	FY2017		
1	Purchased goods and services	13,048	Purchase prices for materials and outsourced work multiplied by CO ₂ emission factor*
2	Capital goods	921	Capital investment cost multiplied by CO ₂ emission factor*
3	Fuel- and energy-related activities not included in Scope 1 or Scope 2	386	Annual consumption of electricity and steam multiplied by CO ₂ emission factor*
4	Upstream transportation and delivery	650	Transportation distance stated in reports (based on Energy Saving Act) multiplied by CO ₂ emission factor*
5	Waste generated in operations	87	Waste volume (by type) multiplied by CO ₂ emission factor*
6	Business travel	4	Number of employees multiplied by CO ₂ emission factor*
7	Employee commuting	54	Number of employees multiplied by CO ₂ emission factor*
15	Investments	1,122	Emissions from companies of which more than 20% of their stock is held by the Group, and which are accountable under the Energy Saving Act, multiplied by the stock holding ratio

Coverage: (Categories 1, 2, 4, 5) JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, and JFE Shoji Trade
(Category 3, 6, 7) JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, 10 JFE Engineering domestic subsidiaries, and JFE Shoji Trade
(Category 15) Japan Marine United, and 9 JFE Steel equity-method affiliates (7 domestic and 2 overseas)

*Sources: Green Value Chain Platform (Ministry of the Environment) and others

JFE Group Recycling Businesses

Examples of Recycling and Processing (FY2017)

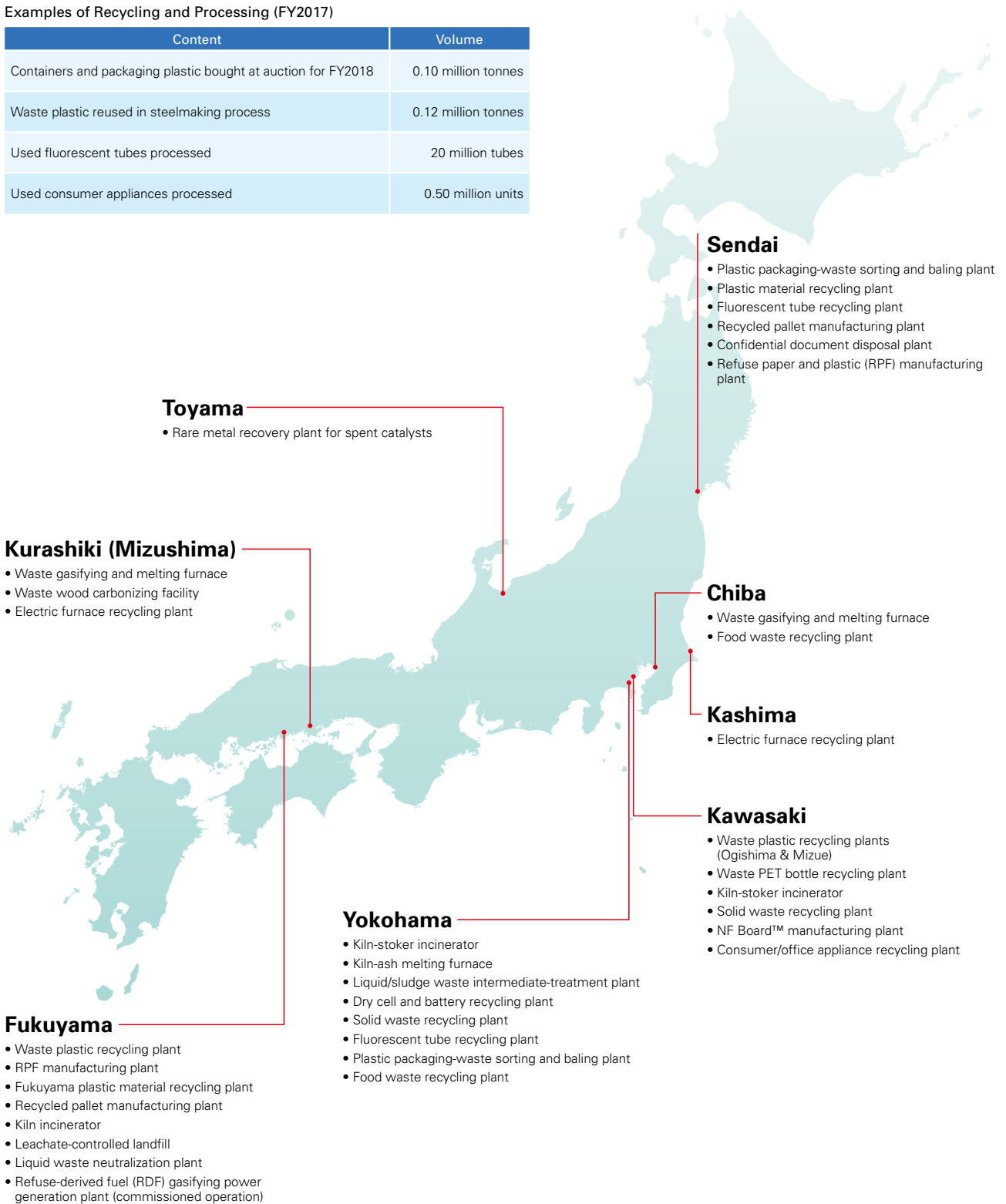
Content	Volume
Containers and packaging plastic bought at auction for FY2018	0.10 million tonnes
Waste plastic reused in steelmaking process	0.12 million tonnes
Used fluorescent tubes processed	20 million tubes
Used consumer appliances processed	0.50 million units

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade



JFE Group's Recycling Business List

JFE Group's Recycling Business List

District	Name of the Companies, Plants and Offices	Facilities	Address
Sendai	Shinko Recycle Corporation (scheduled to be consolidated on October 1) Main Office Plant	Sendai City plastic packaging waste sorting and baling plant Plastic material recycling plant Fluorescent tube recycling plant Recycled pallet manufacturing plant Confidential document disposal plant RPF manufacturing plant	1-6-1 Minato, Miyagino-ku, Sendai-shi, Miyagi Same as above Same as above Same as above Same as above 6-5-14 Shirakashi-dai, Rifu-cho, Miyagi-gun, Miyagi
	Rifu Plant		
Kashima	JFE Bars & Shapes Corporation	Electric furnace recycling plant DC electric arc furnace	7 Minamihama, Kamisu-shi, Ibaraki
Chiba	JFE KANKYO Corporation Chiba Recycling Center Chiba Biogas Center	Waste gasifying and melting furnace Food waste recycling plant	1 Kawasaki-cho, Chuo-ku, Chiba-shi, Chiba Same as above
Kawasaki	JFE KANKYO Corporation Ohgishima Recycling Plant Kawasaki PET Bottle Recycling Plant Kawasaki Eco Clean	Waste plastic recycling plant Waste PET bottle recycling plant Kiln-stoker type incinerator Solid waste recycling plant	10 Ohgishima, Kawasaki-ku, Kawasaki-shi, Kanagawa 5-1 Mizue-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa 5-73 Ohgi-machi, Kawasaki-ku, Kawasaki-shi, Kanagawa, and others Same as above
	JFE Plastic Resource Corporation Mizue recycling plant NF Board™ plant	Waste plastic recycling plant NF Board™ manufacturing plant	699-23 Mizue-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, and others 5-1 Mizue-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa
	JFE URBAN RECYCLE CORPORATION Home Appliance Recycling Plant	Consumer/office appliance recycling plant	6-1 Mizue-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa
Yokohama	JFE KANKYO Corporation Yokohama Eco Clean (Incinerator)	Kiln-stoker incinerator Kiln-ash melting furnace	2-1-5 Suehiro-cho, Tsurumi-ku, Yokohama-shi, Kanagawa, and others Same as above
	Chemical works	Liquid/sludge waste intermediate treatment plant Dry-cell and battery recycling plant Fluorescent tube recycling plant	3-1 Benten-cho, Tsurumi-ku, Yokohama-shi, Kanagawa 2-1-8 Suehiro-cho, Tsurumi-ku, Yokohama-shi, Kanagawa Same as above
	Tsurumi fluorescent light recycling plant Yokohama Plastics Recycling Plant Kanazawa Recycling Plant	Yokohama City plastic packaging waste sorting and baling plant Solid waste recycling plant	Same as above 1-14-5 Fukuura, Kanazawa-ku, Yokohama-shi, Kanagawa
	J Bio Food Recycle Co., Ltd Yokohama Recycle Plant	Food waste recycling facility	2-1-5 Suehiro-cho, Tsurumi-ku, Yokohama-shi, Kanagawa
Kurashiki (Mizushima)	Mizushima Eco-Works Co., Ltd.	Waste gasifying and melting furnace	1-14-5 Mizushimakawasaki-dori, Kurashiki-shi, Okayama
	JFE Environmental Service Corporation Kurashiki Plant	Waste wood carbonization plant	1-14-1 Mizushimakawasaki-dori, Kurashiki-shi, Okayama
	JFE Bars & Shapes Corporation	Electric-furnace recycling plant DC electric arc furnace	1-5-2 Mizushimakawasaki-dori, Kurashiki-shi, Okayama, and others
Fukuyama	JFE Plastic Resource Corporation Fukuyama recycling plant	Waste plastic recycling plant	113 Minoki-cho, Fukuyama-shi, Hiroshima
	JFE KANKYO Corporation Fukuyama RPF Plant Fukuyama PM Recycling Plant Fukuyama Recycled Pallet Plant Fukuyama Incinerator	RPF manufacturing plant Plastic material recycling plant Recycled pallet manufacturing plant Kiln incinerator Leachate-controlled landfill Liquid waste neutralization plant	115-1 Minoki-cho, Fukuyama-shi, Hiroshima Same as above Same as above 1 Kokan-cho, Fukuyama-shi, Hiroshima Same as above Same as above
	Fukuyama Recycle Power Co., Ltd.	Refuse-derived fuel (RDF) gasifying power generation plant (commissioned operation)	107-8 Minoki-cho, Fukuyama-shi, Hiroshima
Toyama	JFE Material Corporation	Rare metal recovery plant for spent catalysts	2-9-38 Shosei-machi, Imizu-shi, Toyama

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

JFE Steel

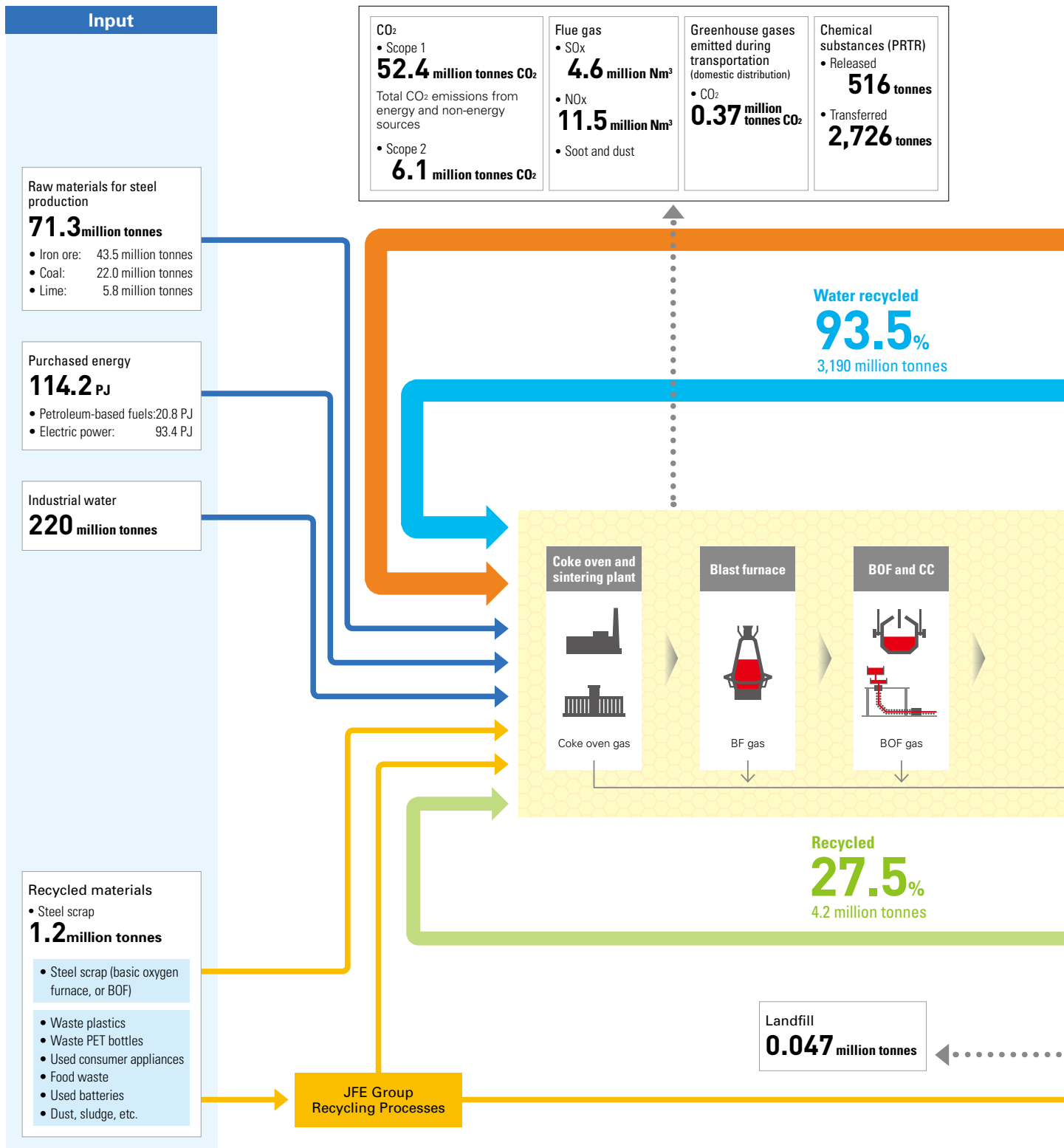
JFE Group

JFE Steel

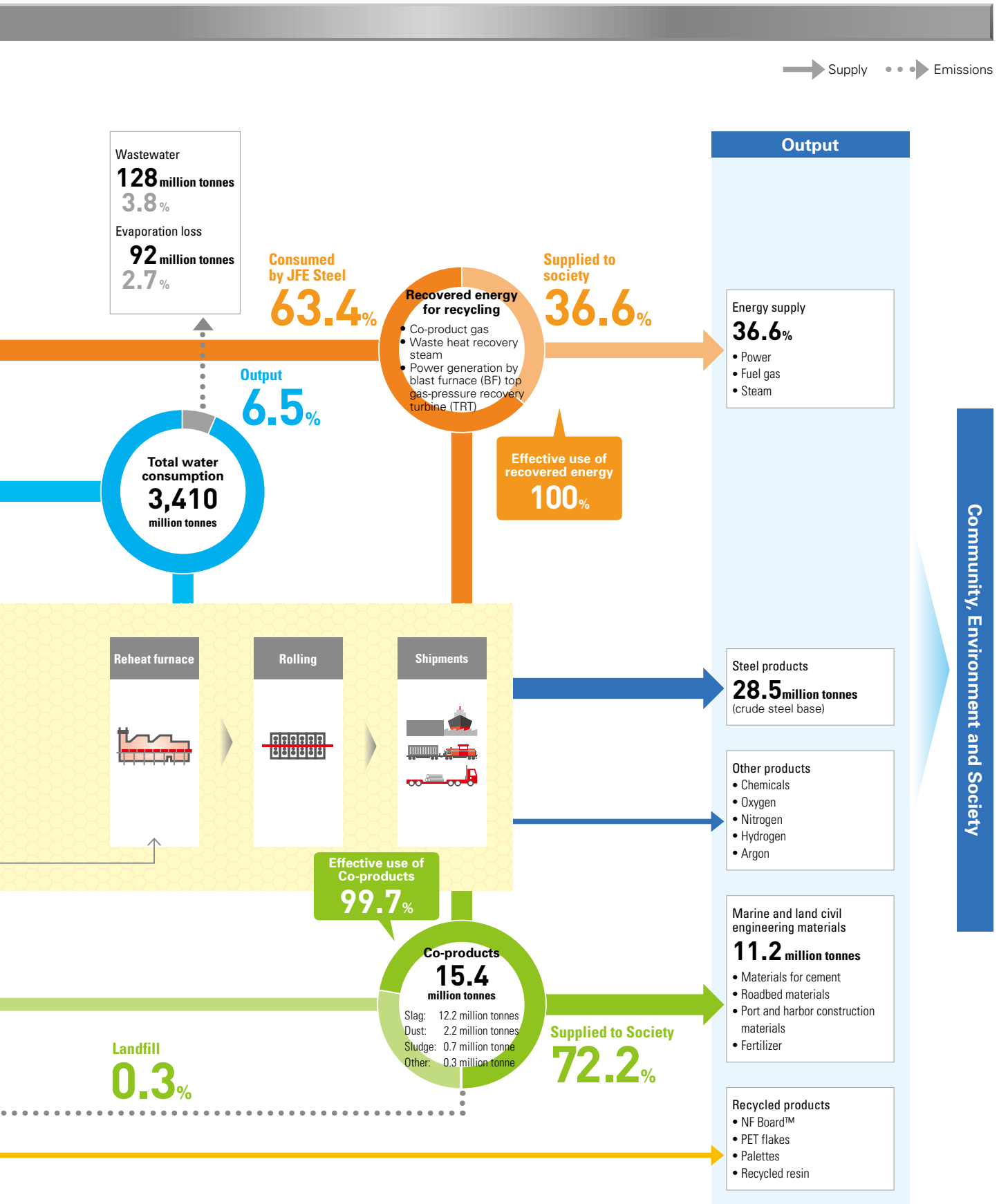
JFE Engineering

JFE Shoji Trade

Material Flow



JFE Steel works to reduce the environmental impact of its steelmaking processes, including through the effective use of resources. The company recycles **93.5%** of the water it uses for production and uses **99.7%** of its co-products, such as iron-steel slag. In addition, **100%** of co-product gas generated during production is reused as fuel for reheating slabs, generating power for internal use and supplying power to the public.



JFE Group

JFE Steel

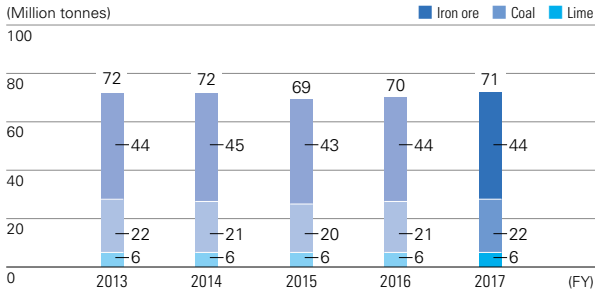
JFE Engineering

JFE Shoji Trade

Community, Environment and Society

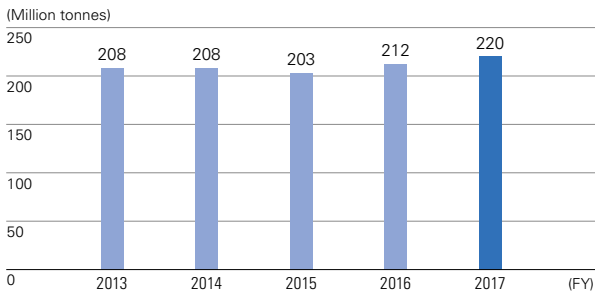
Input Materials

Materials for Steel Production

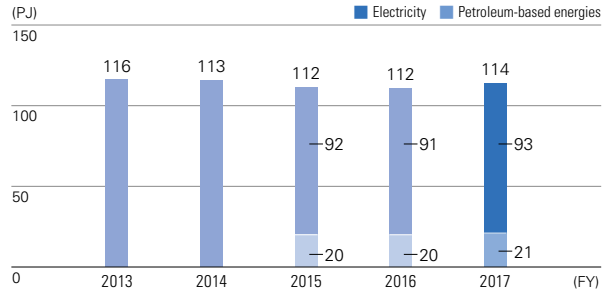


Note: Values for past fiscal years have been recalculated retroactively for improved accuracy.

Industrial Water



Purchased Energy (Electricity and Petroleum-based Energies)

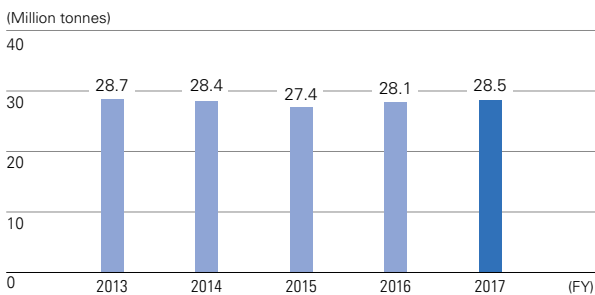


Water Used by JFE Steel Group Subsidiaries

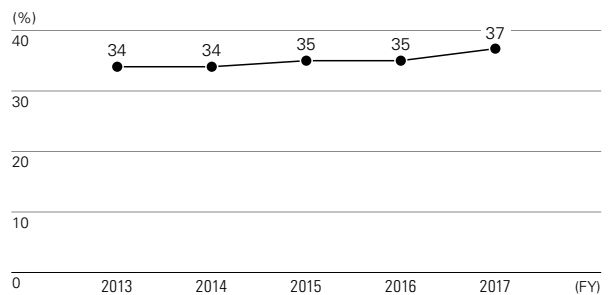
Name of Company	Amount of Water Used (m³)	Name of Company	Amount of Water Used (m³)
JFE Chemical Corp.	5,385,116	JFE KENZAI FENCE CO., LTD.	66,764
JFE Bars & Shapes Corporation	4,619,798	JFE Welded Pipe Manufacturing Co., Ltd.	48,765
JFE Material Co., Ltd.	3,468,481	JFE ROCKFIBER CORPORATION	35,154
JFE MINERAL COMPANY, LTD.	2,404,150	K-PLASHEET CORPORATION	27,959
JFE Galvanizing & Coating Co., Ltd.	1,347,383	JFE Kozai Corporation	20,353
JFE PRECISION CORPORATION	875,268	GECOSS CORPORATION	18,857
Galvatec Corporation	669,509	JFE Plastic Resource Corporation	17,372
Mizushima Ferroalloy Co., Ltd.	455,415	MIZUSHIMA RIVERMENT CORP.	15,821
JFE LIFE CORPORATION	446,378	JFE Pipe Fitting Mfg. Co., Ltd.	15,324
JFE Container Co., Ltd.	297,120	CHIBA RIVERMENT AND CEMENT CORP.	11,525
JFE Metal Products & Engineering Inc.	159,293	J-Logitec Co., Ltd.	3,735
JFE LOGISTICS CORPORATION	105,292	JFE Steel Pipe Co., Ltd.	1,800
JFE Techno-wire Corporation	102,963	Total	20,619,595

Output Products

Steel Products



Energy Supply Rate for Recovered Energy



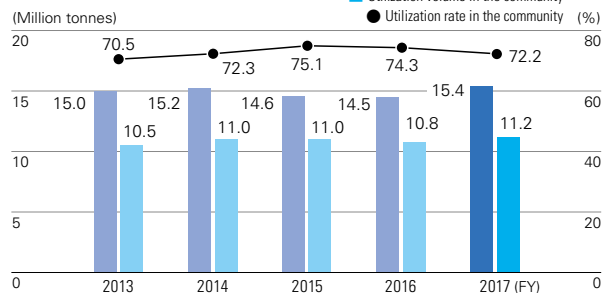
Co-products

- NF Board™
- PET Flakes
- Pallet
- Recycled Resin

Other Products

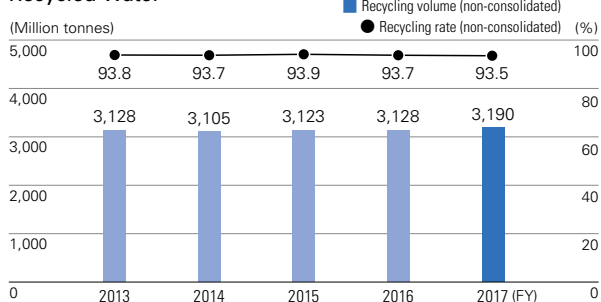
- Chemicals
- Oxygen
- Nitrogen
- Hydrogen
- Argon

Marine & Land Civil Engineering Materials (Usage from Co-products)



Recycled Resources

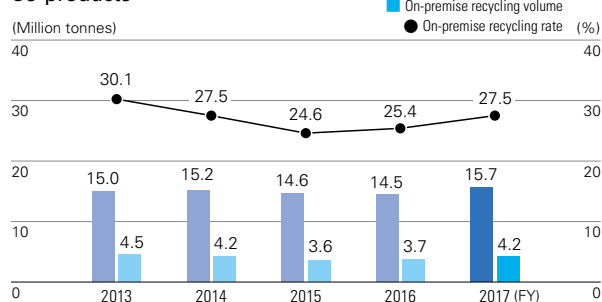
Recycled Water



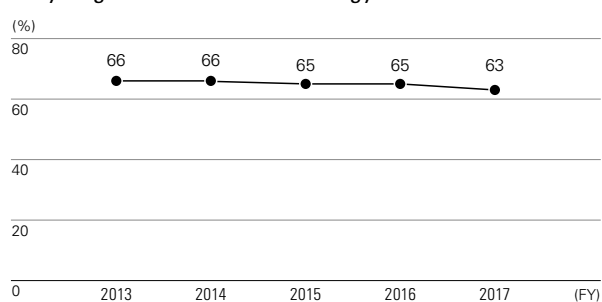
Group companies	Recycling volume	Recycling rate
	–	–
	–	–
	–	–
	314	91
	280 (Million m ³)	93 (%)

Note: Data cover 25 domestic consolidated subsidiaries of JFE Steel

Co-products



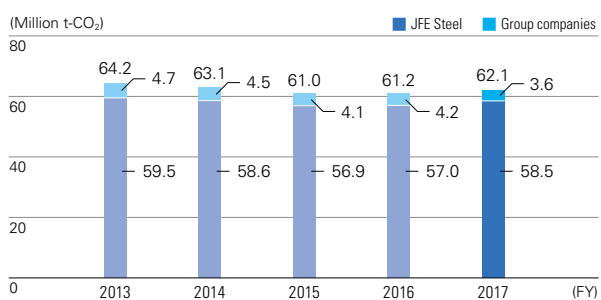
Recycling Rate for Recovered Energy



CO₂ Emissions and Energy Consumption

Status of the JFE Steel Group

CO₂ Emissions



Notes: Data cover JFE Steel (CO₂ emissions from energy and non-energy sources), 25 domestic subsidiaries (CO₂ emissions from energy sources) and 4 overseas subsidiaries (CO₂ emissions from energy sources). Data for certain fiscal years have been recalculated retroactively for improved accuracy.

CO₂ Emission Factor for Purchased Energy

- JFE Steel uses the emission factor of the Low-Carbon Society Action Plan of the Japan Iron and Steel Federation for energy purchased in FY2017.
- With the exception of JFE Steel, companies use the CO₂ equivalent of 0.000512 (t-CO₂/kWh) for the FY2016 unadjusted emission factors of each electric power company.
- Overseas: based on each country's GHG protocol

CO₂ Emissions of JFE Steel Group Subsidiaries (FY2017)

Name of Company	CO ₂ Emissions (t-CO ₂)
JFE Bars & Shapes Corporation	698,619
JFE MINERAL COMPANY, LTD.	433,687
Mizushima Ferroalloy Co., Ltd.	308,679
JFE Chemical Corp.	284,498
JFE LOGISTICS CORPORATION	172,515
JFE Galvanizing & Coating Co., Ltd.	85,596
JFE Material Co., Ltd.	60,468
JFE ROCKFIBER CORPORATION	38,436
JFE Pipe Fitting Mfg. Co., Ltd.	24,434
JFE Plastic Resource Corporation	22,252
JFE Metal Products & Engineering Inc.	17,963
GECOSS CORPORATION	13,539
JFE Welded Pipe Manufacturing Co., Ltd.	12,168
JFE Container Co., Ltd.	11,646
J-Logitec Co., Ltd.	10,500
CHIBA RIVERMENT AND CEMENT CORP.	9,095
Galvatex Corporation	8,777
JFE Techno-wire Corporation	7,196
MIZUSHIMA RIVERMENT CORP.	7,021
JFE PRECISION CORPORATION	6,598
K-PLASHEET CORPORATION	6,337
JFE LIFE CORPORATION	6,213
JFE KENZAI FENCE CO., LTD.	4,278
JFE Steel Pipe Co., Ltd.	3,627
JFE Kozai Corporation	2,898
4 overseas companies	1,380,943
Total	3,637,492

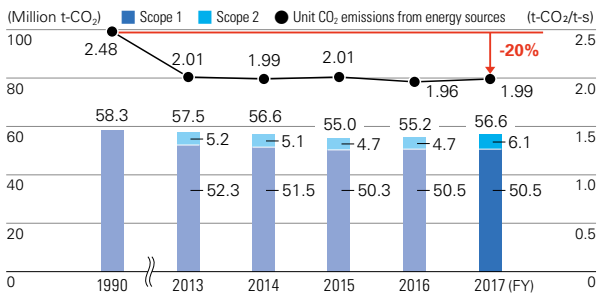
Energy Consumption of JFE Steel Group Subsidiaries (FY2017)

Name of Company	Consumption (GJ)
JFE Bars & Shapes Corporation	11,476,443
JFE MINERAL COMPANY, LTD.	6,976,331
JFE Chemical Corp.	5,235,209
Mizushima Ferroalloy Co., Ltd.	3,191,370
JFE LOGISTICS CORPORATION	2,465,429
JFE Galvanizing & Coating Co., Ltd.	1,622,452
JFE Material Co., Ltd.	1,255,564
JFE ROCKFIBER CORPORATION	537,946
JFE Pipe Fitting Mfg. Co., Ltd.	396,555
JFE Plastic Resource Corporation	368,980
JFE Metal Products & Engineering Inc.	336,236
JFE Welded Pipe Manufacturing Co., Ltd.	250,162
JFE Container Co., Ltd.	227,752
GECOSS CORPORATION	218,362
Galvatex Corporation	176,319
MIZUSHIMA RIVERMENT CORP.	168,838
CHIBA RIVERMENT AND CEMENT CORP.	166,026
J-Logitec Co., Ltd.	153,514
JFE Techno-wire Corporation	146,130
JFE LIFE CORPORATION	140,163
JFE PRECISION CORPORATION	117,004
K-PLASHEET CORPORATION	102,722
JFE KENZAI FENCE CO., LTD.	86,530
JFE Steel Pipe Co., Ltd.	73,282
JFE Kozai Corporation	64,715
4 overseas companies	17,474,943
Total	53,428,977

The totals do not add up due to rounding.

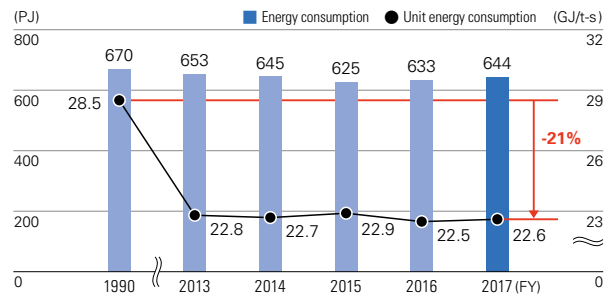
◆ Status of JFE Steel

CO₂ Emissions from Energy Sources and Unit CO₂ Emissions



Notes: The CO₂ coefficient for electricity purchased in FY2017 is based on the Japan Iron and Steel Federation's Low-Carbon Society Implementation Plan.
Data for certain fiscal years have been recalculated retroactively for improved accuracy.

Energy Consumption and Unit Energy Consumption



Note: Data for certain fiscal years have been recalculated retroactively for improved accuracy.

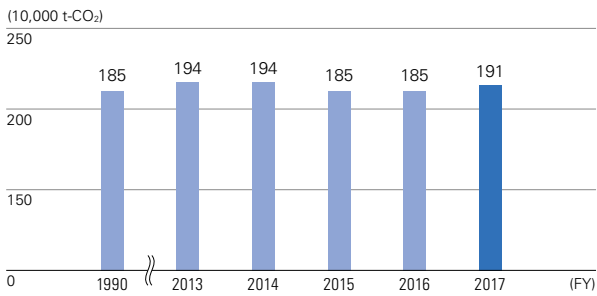
Changes in Unit CO₂ Emissions and Crude Steel Production vs. FY1990

	2013	2014	2015	2016	2017
Unit Emissions (%)	-19	-20	-19	-21	-20
Crude Steel Production (%)	22	21	16	19	21

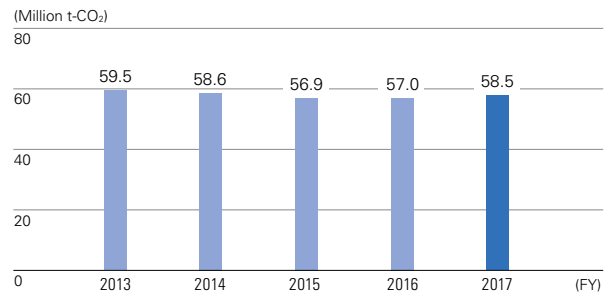
Changes in Unit Energy Consumption and Crude Steel Production vs. FY1990

	2013	2014	2015	2016	2017
Unit Emissions (%)	-20	-20	-20	-21	-21
Crude Steel Production (%)	22	21	16	19	21

CO₂ Emissions from Non-Energy Sources of JFE Steel

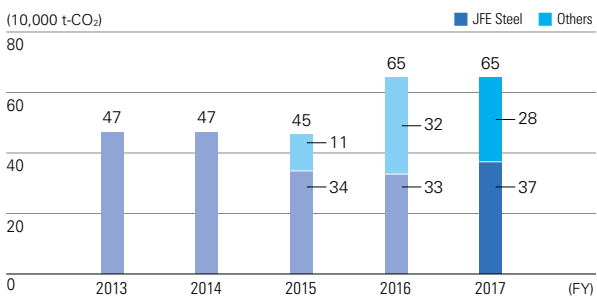


Total CO₂ Emissions from Energy and Non-Energy Sources



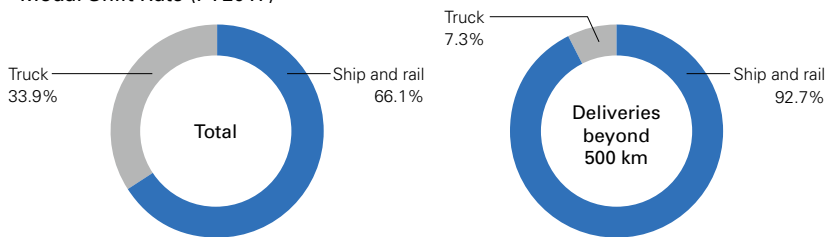
Data for certain fiscal years have been recalculated retroactively for improved accuracy.

Greenhouse Gas Emitted During Transportation

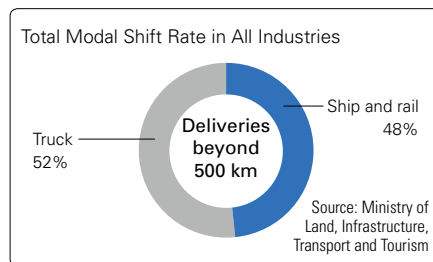


Notes: Data cover JFE Steel and 11 domestic and overseas subsidiaries, which are specified consigners designated under the Japanese Energy Saving Act. For Others, data up to FY2015 consist of emissions from trucks and railways used by the Group companies, while the scope is expanded to truck, rail and ship from FY2016.

Modal Shift Rate (FY2017)



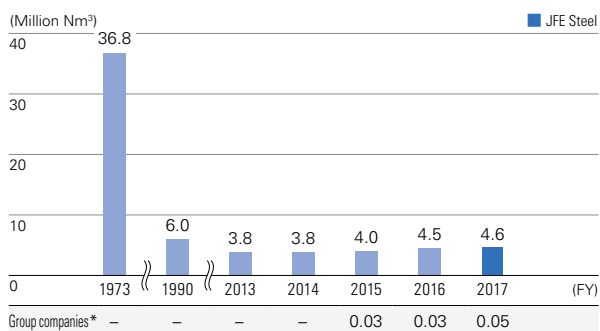
Scope of calculation: All products and half-finished products transported in Japan



Disposed Substances

◆ Atmospheric Emissions

SOx Emissions

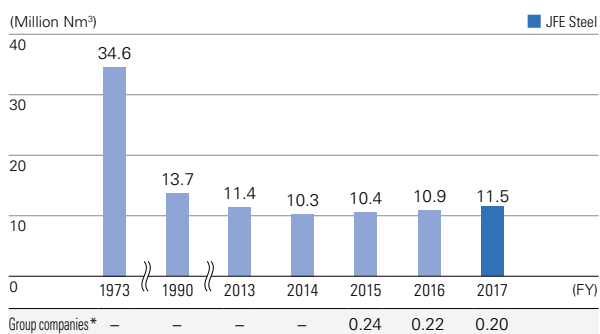


*13 JFE Steel consolidated subsidiaries in Japan.

SOx Emissions of JFE Steel Group Subsidiaries

Name of Company	SOx (Nm³)	Name of Company	SOx (Nm³)
JFE Material Co., Ltd.	16,237	JFE Container Co., Ltd.	230
JFE Bars & Shapes Corporation	9,373	K-PLASHEET CORPORATION	203
JFE Chemical Corp.	8,455	JFE Plastic Resource Corporation	149
JFE MINERAL COMPANY, LTD.	7,544	CHIBA RIVERMENT AND CEMENT CORP.	97
JFE Galvanizing & Coating Co., Ltd.	2,009	JFE Metal Products & Engineering Inc.	52
JFE PRECISION CORPORATION	1,125	JFE Pipe Fitting Mfg. Co., Ltd.	48
Mizushima Ferroalloy Co., Ltd.	314	Total	45,836

NOx Emissions



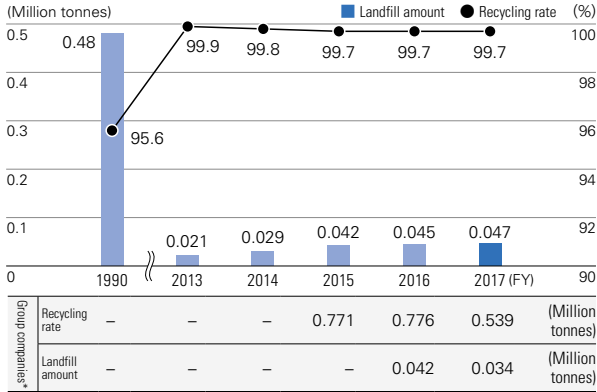
*14 JFE Steel consolidated subsidiaries in Japan.

NOx Emissions of JFE Steel Group Subsidiaries

Name of Company	SOx (Nm³)	Name of Company	SOx (Nm³)
JFE MINERAL COMPANY, LTD.	69,376	MIZUSHIMA RIVERMENT CORP.	1,517
JFE Chemical Corp.	50,265	JFE Metal Products & Engineering Inc.	1,014
JFE Material Co., Ltd.	29,075	CHIBA RIVERMENT AND CEMENT CORP.	935
Mizushima Ferroalloy Co., Ltd.	19,620	JFE Pipe Fitting Mfg. Co., Ltd.	614
JFE Bars & Shapes Corporation	15,508	JFE Plastic Resource Corporation	555
JFE Galvanizing & Coating Co., Ltd.	10,160	JFE PRECISION CORPORATION	491
Total		Total	199,130

◆ Co-product Disposal

Landfill of Co-products and Recycling Rates



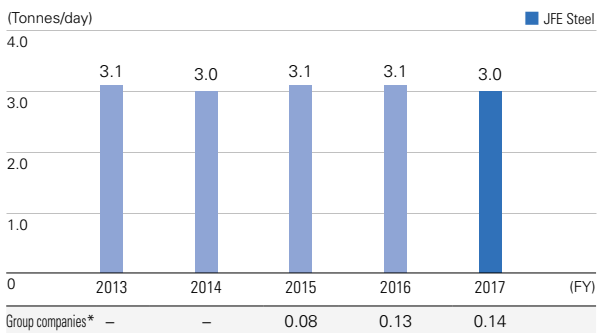
*25 domestic consolidated subsidiaries of JFE Steel.

Generation of Co-product and Landfill Amount of JFE Steel Group Subsidiaries

Name of Company	Co-products Generated (tonnes)	Landfill Amount (tonnes)
JFE Bars & Shapes Corporation	146,179	2,454
Mizushima Ferroalloy Co., Ltd.	125,500	19,309
JFE Material Co., Ltd.	75,633	4,178
JFE Galvanizing & Coating Co., Ltd.	40,359	24
JFE Plastic Resource Corporation	39,404	613
JFE MINERAL COMPANY, LTD.	26,442	72
JFE Kozai Corporation	15,530	25
JFE Welded Pipe Manufacturing Co., Ltd.	14,840	37
JFE ROCKFIBER CORPORATION	11,572	3,832
GECOSS CORPORATION	11,537	820
JFE Container Co., Ltd.	7,526	297
JFE Pipe Fitting Mfg. Co., Ltd.	7,477	15
JFE Metal Products & Engineering Inc.	6,494	106
Galvatex Corporation	4,261	972
JFE LOGISTICS CORPORATION	2,016	443
JFE Techno-wire Corporation	1,532	157
CHIBA RIVERMENT AND CEMENT CORP.	751	1
K-PLASHEET CORPORATION	658	1
JFE KENZAI FENCE CO., LTD.	452	46
JFE Steel Pipe Co., Ltd.	299	164
JFE LIFE CORPORATION	232	212
JFE Chemical Corp.	168	98
J-Logitec Co., Ltd.	66	0
JFE PRECISION CORPORATION	29	0
MIZUSHIMA RIVERMENT CORP.	6	0
Total	538,963	33,876

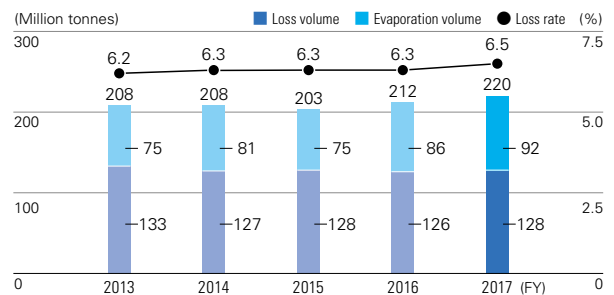
◆ Discharge into Waterways

Chemical Oxygen Demand (COD)



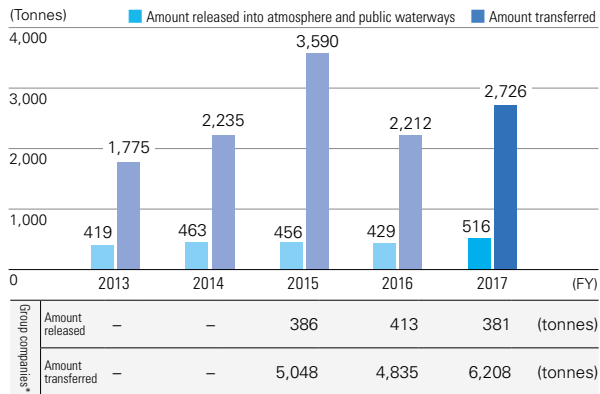
*12 JFE Steel consolidated subsidiaries in Japan.

Wastewater and Evaporation Loss



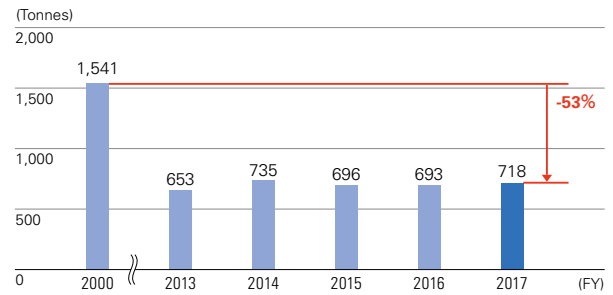
Management of Chemical Substances

Release and Transfer of PRTR-registered Substances



*18 JFE Steel consolidated subsidiaries in Japan.

VOC Emissions



Substances Reported under PRTR (all Companies)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	15	0	0	0	0
15	Acenaphthene	0.023	0	0	0	0	0
31	Antimony and its compounds	0	0.34	0	0	0	22
53	Ethylbenzene	58	0	0	0	0	12
74	p-Octylphenol	0	0	0	0	0	1.2
80	Xylene	122	0	0	0	0	14
87	Chromium and chromium(III) compounds	0.053	0.38	0	0	0	1,189
88	Chromium(VI) compounds	0.0018	0.13	0	0	0	0.87
132	Cobalt and its compounds	0.071	0	0	0	0	0.0019
185	Dichloropentafluoropropane; HCFC-225	49	0	0	0	0	0
186	Dichloromethane; methylene dichloride	33	0	0	0	0	0
188	N,N-dicyclohexylamine	0	0	0	0	0	2.6
240	Styrene	2.2	0	0	0	0	0
242	Selenium and its compounds	0	0.23	0	0	0	1.9
243	Dioxins	5.25	0.0000034	0	0	0	0
262	Tetrachloroethylene	27	0	0	0	0	0
272	Copper salts (water-soluble, except complex salts)	0	0.064	0	0	0	0
292	Tributylamine	0	0	0	0	0	0
296	1,2,4-trimethylbenzene	4.4	0	0	0	0	0.12
297	1,3,5-trimethylbenzene	3.4	0	0	0	0	0
300	Toluene	73	0	0	0	0	2.3
302	Naphthalene	1.2	0	0	0	0	0.2
305	Lead compounds	0	0	0	0	0	360
308	Nickel	0.0018	0	0	0	0	79
309	Nickel compounds	0.0093	2.2	0	0	0	41
321	Vanadium compounds	0	0	0	0	0	22
333	Hydrazine	0	0.23	0	0	0	0
340	Biphenyl	0.011	0	0	0	0	0
374	Hydrogen fluoride and its water-soluble salts	0	48	0	0	0	30
392	N-hexane	0.0063	0	0	0	0	0
400	Benzene	19	0	0	0	0	0
405	Boron compounds	0	23	0	0	0	4.6
406	Polychlorinated biphenyls; PCBs	0	0	0	0	0	37
407	Poly(oxyethylene) alkyl ether (alkyl C = 12 - 15)	0	1.5	0	0	0	0
411	Formaldehyde	0.0017	0	0	0	0	0
412	Manganese and its compounds	0.058	28	0	0	0	672
438	Methylnaphthalene	0.035	0	0	0	0	0
453	Molybdenum and its compounds	0.019	4.7	0	0	0	234
461	Triphenyl phosphate	0.05	0	0	0	0	0
Subtotal		392.54	123.77	0	0	0	2,725.80
Total		516				2,725.80	

The total does not include dioxins.

Substances Reported under PRTR (Chiba District of East Japan Works)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0.13	0	0	0	0
15	Acenaphthene	0.023	0	0	0	0	0
53	Ethylbenzene	0.75	0	0	0	0	0
80	Xylene	1.1	0	0	0	0	0
87	Chromium and chromium(III) compounds	0.0042	0.34	0	0	0	1100
88	Chromium(VI) compounds	0	0.13	0	0	0	0
185	Dichloropentafluoropropane; HCFC-225	49	0	0	0	0	0
243	Dioxins	0.25	0.0000034	0	0	0	0
272	Copper salts (water-soluble, except complex salts)	0	0.064	0	0	0	0
300	Toluene	0.26	0	0	0	0	0
302	Naphthalene	0.16	0	0	0	0	0
308	Nickel	0	0	0	0	0	79
309	Nickel compounds	0.0021	1.6	0	0	0	2.1
333	Hydrazine	0	0.23	0	0	0	0
340	Biphenyl	0.011	0	0	0	0	0
374	Hydrogen fluoride and its water-soluble salts	0	39	0	0	0	30
400	Benzene	1.6	0	0	0	0	0
405	Boron compounds	0	7.4	0	0	0	0.52
406	Polychlorinated biphenyls; PCBs	0	0	0	0	0	16
412	Manganese and its compounds	0.0096	0.69	0	0	0	130
438	Methylnaphthalene	0.035	0	0	0	0	0
453	Molybdenum and its compounds	0	2.7	0	0	0	4.1
Subtotal		53	52	0	0	0	1,361.72
Total		105				1,361.72	

The total does not include dioxins.

Substances Reported under PRTR (Keihin District of East Japan Works)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	2.5	0	0	0	0	1
74	p-Octylphenol	0	0	0	0	0	1.2
80	Xylene	4.7	0	0	0	0	1.8
87	Chromium and chromium(III) compounds	0.017	0	0	0	0	39
88	Chromium(VI) compounds	0.0018	0	0	0	0	0
240	Styrene	0.14	0	0	0	0	0
243	Dioxins	1.4	0	0	0	0	0
300	Toluene	15	0	0	0	0	2.2
302	Naphthalene	0.072	0	0	0	0	0
309	Nickel compounds	0.0022	0	0	0	0	3.1
400	Benzene	5.8	0	0	0	0	0
405	Boron compounds	0	2.6	0	0	0	0
406	Polychlorinated biphenyls; PCBs	0	0	0	0	0	21
412	Manganese and its compounds	0.0099	0.45	0	0	0	150
453	Molybdenum and its compounds	0.0017	1.4	0	0	0	170
Subtotal		28.25	4.34	0	0	0	499.3
Total		32				499.3	

The total does not include dioxins.

There was no release and transfer of PRTR-registered substances at Nishinomiya District.

Substances Reported under PRTR (Kurashiki District of West Japan Works)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	13	0	0	0	0
31	Antimony and its compounds	0	0.095	0	0	0	0
53	Ethylbenzene	4	0	0	0	0	0
80	Xylene	6	0	0	0	0	0
87	Chromium and chromium(III) compounds	0.0099	0	0	0	0	16
88	Chromium(VI) compounds	0	0	0	0	0	0.87
186	Dichloromethane; methylene dichloride	17	0	0	0	0	0
242	Selenium and its compounds	0	0.23	0	0	0	1.9
243	Dioxins	0.27	0	0	0	0	0
262	Tetrachloroethylene	1.5	0	0	0	0	0
296	1,2,4-trimethylbenzene	1.6	0	0	0	0	0
300	Toluene	29	0	0	0	0	0
309	Nickel compounds	0.005	0	0	0	0	2.6
400	Benzene	2.6	0	0	0	0	0
405	Boron compounds	0	10	0	0	0	1.8
407	Poly(oxyethylene) alkyl ether (alkyl C=12-15)	0	1.5	0	0	0	0
411	Formaldehyde	0.0001	0	0	0	0	0
412	Manganese and its compounds	0.023	22	0	0	0	86
453	Molybdenum and its compounds	0	0.67	0	0	0	0
Subtotal		61.74	47.50	0	0	0	109.17
Total		109.23				109.17	

The total does not include dioxins.

Substances Reported under PRTR (Konan District of West Japan Works)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
300	Toluene	2.3	0	0	0	0	0
Subtotal		2.3	0	0	0	0	0
Total		2.3				0	

Substances Reported under PRTR (Fukuyama District of West Japan Works)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	2	0	0	0	0
31	Antimony and its compounds	0	0.24	0	0	0	22
53	Ethylbenzene	25	0	0	0	0	11
80	Xylene	80	0	0	0	0	12
87	Chromium and chromium(III) compounds	0.022	0	0	0	0	34
132	Cobalt and its compounds	0.071	0	0	0	0	0.0019
186	Dichloromethane; methylene dichloride	16	0	0	0	0	0
240	Styrene	0.57	0	0	0	0	0
243	Dioxins	2.9	0	0	0	0	0
262	Tetrachloroethylene	25	0	0	0	0	0
296	1,2,4-trimethylbenzene	2.6	0	0	0	0	0.12
300	Toluene	19	0	0	0	0	0.082
302	Naphthalene	1	0	0	0	0	0.2
305	Lead compounds	0	0	0	0	0	220
308	Nickel	0.0018	0	0	0	0	0
309	Nickel compounds	0	0.55	0	0	0	31
321	Vanadium compounds	0	0	0	0	0	22
374	Hydrogen fluoride and its water-soluble salts	0	8.8	0	0	0	0
400	Benzene	9	0	0	0	0	0
405	Boron compounds	0	1.7	0	0	0	2.3
411	Formaldehyde	0.0016	0	0	0	0	0
412	Manganese and its compounds	0.016	4.1	0	0	0	160
453	Molybdenum and its compounds	0.015	0.22	0	0	0	0.068
461	Triphenyl phosphate	0.05	0	0	0	0	0
Subtotal		178.35	17.61	0	0	0	514.77
Total		195.96				514.77	

The total does not include dioxins.

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

Substances Reported under PRTR (Chita Works)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0.029	0	0	0	0
53	Ethylbenzene	26	0	0	0	0	0
80	Xylene	30	0	0	0	0	0
87	Chromium and chromium(III) compounds	0	0.041	0	0	0	0.13
188	N,N-dicyclohexylamine	0	0	0	0	0	2.6
240	Styrene	1.5	0	0	0	0	0
296	1,2,4-trimethylbenzene	0.16	0	0	0	0	0
297	1,3,5-trimethylbenzene	3.4	0	0	0	0	0
300	Toluene	7.5	0	0	0	0	0
309	Nickel compounds	0	0.033	0	0	0	2.2
392	N-hexane	0.0063	0	0	0	0	0
405	Boron compounds	0	1.1	0	0	0	0
412	Manganese and its compounds	0	0.15	0	0	0	11
453	Molybdenum and its compounds	0	0.22	0	0	0	0.069
Subtotal		68.57	1.57	0	0	0	16
Total		70.14				16	

Substances Reported under PRTR (Sendai Works)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
80	Xylene	0.0083	0	0	0	0	0
243	Dioxins	0.43	0	0	0	0	0
305	Lead compounds	0	0	0	0	0	140
412	Manganese and its compounds	0	0	0	0	0	85
Subtotal		0.0083	0	0	0	0	225
Total		0.0083				225	

The total does not include dioxins.

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

◆ All Substances Reported under PRTR by Group Companies

Substances Reported under PRTR (JFE ROCKFIBER CORPORATION)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
277	Triethylamine	1.4	0	0	0	0	0
349	Phenol	5.7	0	0	0	0	0
411	Formaldehyde	2.1	0	0	0	0	0
Subtotal		9.2	0	0	0	0	0
Total		9.2				0	

Substances Reported under PRTR (Mizushima Ferroalloy Co., Ltd.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
87	Chromium and chromium(III) compounds	0	0	0	0	0	4.9
405	Boron compounds	0	0	0	0	0	3.2
412	Manganese and its compounds	14	0	0	0	0	4,100
Subtotal		14	0	0	0	0	4,108.1
Total		14				4,108.1	

Substances Reported under PRTR (JFE Material Co., Ltd.)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0.035	0	0	0	0
87	Chromium and chromium(III) compounds	0.22	0.056	0	0	0	220
88	Chromium(VI) compounds	0	0.018	0	0	0	0
242	Selenium and its compounds	0	0.096	0	0	0	0
243	Dioxins	0.00000036	0.000002	0	0	0	0.00002
305	Lead compounds	0	0.0094	0	0	0	0
309	Nickel compounds	0.02	0.006	0	0	0	6.2
321	Vanadium compounds	0.042	0.53	0	0	0	1.2
374	Hydrogen fluoride and its water-soluble salts	0	1.3	0	0	0	0
405	Boron compounds	0	0.87	0	0	0	0
412	Manganese and its compounds	0	1.2	0	0	0	0
453	Molybdenum and its compounds	0.037	3.7	0	0	0	6.5
Subtotal		0.319	7.8204	0	0	0	233.9
Total		8.1394				233.9	

The total does not include dioxins.

Substances Reported under PRTR (JFE PRECISION CORPORATION)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0.17	0	0	0	0
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.000517
186	Dichloromethane; methylene dichloride	18.1	0	0	0	0	5.1
308	Nickel	0	0	0	0	0	0.00428
453	Molybdenum and its compounds	0	0	0	0	0	0.00116
Subtotal		18.1	0.17	0	0	0	5.105957
Total		18.27				5.105957	

Substances Reported under PRTR (JFE Bars & Shapes Corporation)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0.25	0	0	0	0
75	Cadmium and its compounds	0	0	0	0	0	3.3
80	Xylene	0	0	0	0	0	0
87	Chromium and chromium(III) compounds	0	0	0	0	0	47
243	Dioxins	2.019	0	0	0	0	0
305	Lead compounds	0	0	0	0	0.001	301.77
405	Boron compounds	0	0	0	0	0.17	2
412	Manganese and its compounds	0	0.015	0	0	0.0068	1,250
Subtotal		0	0.265	0	0	0.1778	1,604.07
Total		0.265				1,604.2478	

The total does not include dioxins.

Substances Reported under PRTR (JFE Metal Products & Engineering Inc.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	9.7	0	0	0	0	0
80	Xylene	40.3	0	0	0	0	0
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.517
132	Cobalt and its compounds	0	0	0	0	0	0.128
272	Copper salts (water-soluble, except complex salts)	0	0	0	0	0	0.23
296	1,2,4-trimethylbenzene	9.4	0	0	0	0	0
309	Nickel compounds	0	0	0	0	0	0.444
374	Hydrogen fluoride and its water-soluble salts	0	0	0	0	0	0.508
405	Boron compounds	0	0	0	0	0	4.663
412	Manganese and its compounds	0	0	0	0	0	0.203
Subtotal		59.4	0	0	0	0	6.693
Total		59.4				6.693	

Substances Reported under PRTR (JFE KENZAI FENCE CO., LTD.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0	0	0	0	0.93
291	1,3,5-tris(2,3-epoxypropyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	0	0	0	0	0	1.16
Subtotal		0	0	0	0	0	2.09
Total		0				2.09	

Substances Reported under PRTR (JFE Galvanizing & Coating Co., Ltd.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	3.7	0	0	0	0	1.8
80	Xylene	5.4	0	0	0	0	16.61
83	Cumene	0.003	0	0	0	0	0.004
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.43
88	Chromium(VI) compounds	0	0.002	0	0	0	1.62
296	1,2,4-trimethylbenzene	0.5	0	0	0	0	0.9
297	1,3,5-trimethylbenzene	0.6	0	0	0	0	0.5
300	Toluene	0.3	0	0	0	0	32.6
302	Naphthalene	0.1	0	0	0	0	0.1
305	Lead compounds	0	0	0	0	0	0.02
309	Nickel compounds	0.018	0	0	0	0	0.012
354	Di-n-butyl phthalate	0.06	0	0	0	0	0.05
411	Formaldehyde	0.06	0	0	0	0	0.06
Subtotal		10.7128	0.002	0	0	0	54.595
Total		10.7148				54.595	

Substances Reported under PRTR (JFE Container Co., Ltd.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0.015	0	0	0	0.422
53	Ethylbenzene	59	0	0	0	0	15
71	Ferric chloride	0	0	0	0	0	0
80	Xylene	121	0	0	0	0	33
277	Triethylamine	0.4	0	0	0	0	0.0
296	1,2,4-trimethylbenzene	22.3	0	0	0	0	2.71
297	1,3,5-trimethylbenzene	4.4	0	0	0	0	0.53
300	Toluene	25.5	0	0	0	0	20.44
411	Formaldehyde	2.4	0	0	0	0	0.6
Subtotal		234.65	0.015	0	0	0	72.434
Total		234.665				72.434	

Substances Reported under PRTR (JFE Welded Pipe Manufacturing Co., Ltd.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
188	N,N-dicyclohexylamine	1.6	0	0	0	0	0
Subtotal		1.6	0	0	0	0	0
Total		1.6				0	

Substances Reported under PRTR (JFE Steel Pipe Co., Ltd.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
80	Xylene	0.1	0	0	0	0	0.1
300	Toluene	0.6	0	0	0	0	0.6
448	Methylenebis(4,1-phenylene) diisocyanate	0	0	0	0	0	0.4
Subtotal		0.7	0	0	0	0	1.1
Total		0.7				1.1	

Substances Reported under PRTR (Galvatex Corporation)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0.12	0.03	0	0	0	60.0
75	Cadmium and its compounds	0.0004	0.0002	0	0	0	0.027
305	Lead compounds	0.026	0.00023	0	0	0	0.424
Subtotal		0.1464	0.03043	0	0	0	60.451
Total		0.17683				60.451	

Substances Reported under PRTR (JFE Pipe Fitting Mfg. Co., Ltd.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
281	Trichloroethylene	12	0	0	0	0	0
Subtotal		12	0	0	0	0	0
Total		12				0	

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

Substances Reported under PRTR (JFE Techno-wire Corporation)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
304	Lead	0	0	0	0	0	0.26
Subtotal		0	0	0	0	0	0.26
Total		0				0.26	

Substances Reported under PRTR (GECOSS CORPORATION)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
412	Manganese and its compounds	0.097	0	0	0	0	0.48
Subtotal		0.097	0	0	0	0	0.48
Total		0.097				0.48	

Substances Reported under PRTR (JFE Chemical Corp.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
15	Acenaphthene	0.01	0	0	0	0	0
53	Ethylbenzene	0.5	0	0	0	0	0
80	Xylene	1.17	0	0	0	0	0
81	Quinoline	0	0	0	0	0	0
86	Cresol	0.12	0	0	0	0	0
190	Dicyclopentadiene	0.02	0	0	0	0	0
240	Styrene	0.63	0	0	0	0	0
296	1,2,4-trimethylbenzene	0.04	0	0	0	0	0
300	Toluene	1.56	0	0	0	0	0
302	Naphthalene	0.57	0	0	0	0	0
321	Vanadium compounds	0	0	0	0	0	1.12
340	Biphenyl	0.02	0	0	0	0	0
349	Phenol	0.14	0	0	0	0	0
400	Benzene	4.47	0	0	0	0	0.01
438	Methylnaphthalene	0.01	0	0	0	0	0
453	Molybdenum and its compounds	0	0	0	0	0	0.71
Subtotal		9.21	0	0	0	0	1.84
Total		9.21				1.84	

Substances Reported under PRTR (JFE MINERAL COMPANY, LTD.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
71	Ferric chloride	0	0	0	0	0	0
80	Xylene	0.029	0	0	0	0	0
132	Cobalt and its compounds	0	0	0	0	0	11
300	Toluene	0.0485	0	0	0	0	0
308	Nickel	0	0	0	0	0	28
309	Nickel compounds	0	0	0	0	0	18
438	Methylnaphthalene	0.0105	0	0	0	0	0
Subtotal		0.088	0	0	0	0	57
Total		0.088				57	

Substances Reported under PRTR (K-PLASHEET CORPORATION)

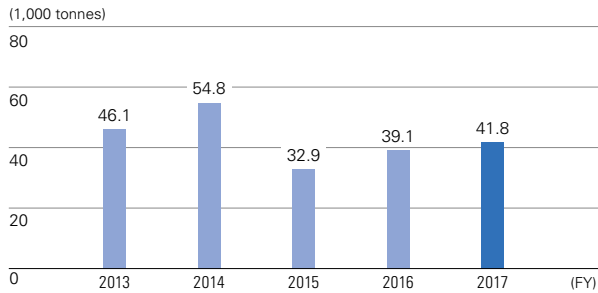
(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
30	n-alkylbenzenesulfonic acid and its salts	0	0.1	0	0	0	0
Subtotal		0	0.1	0	0	0	0
Total		0.1				0	

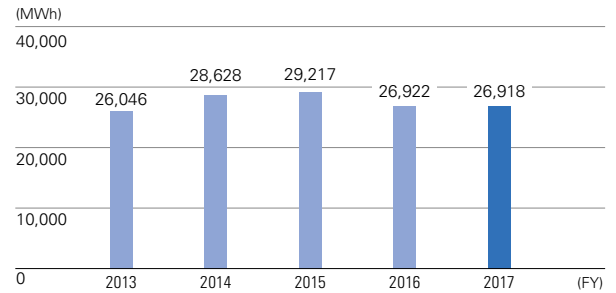
JFE Engineering

Input Materials

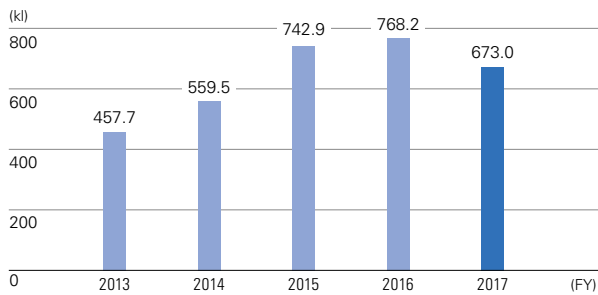
Raw Materials



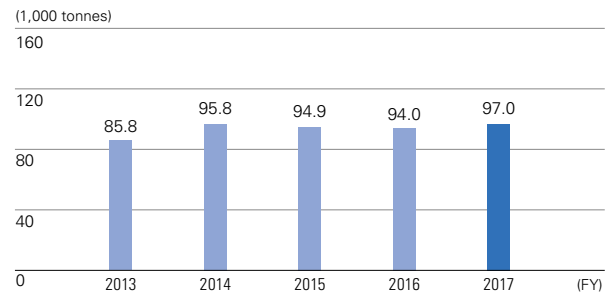
Electricity



Heavy Oil, Kerosene, Light Oil and Gasoline



Water

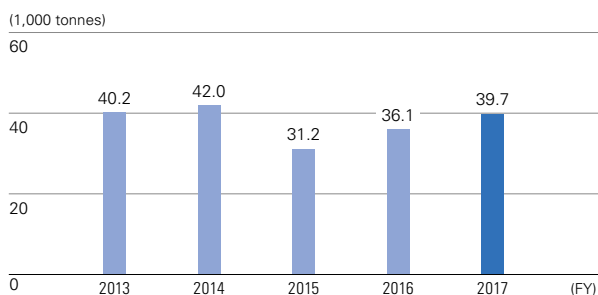


Water Used by JFE Engineering Group Subsidiaries

Name of Company	CO ₂ Emissions (t)
JFE KANKYO Corporation	714,289
J Farm Corporation	20,470
Tohoku Dock Ironworks Corporation	52
Fujikako, Inc.	27
NORTHERN JAPAN MACHINERY Corporation	8
JFE Aqua Machine and Service Corporation	1
Total	734,846

Output Products

Products

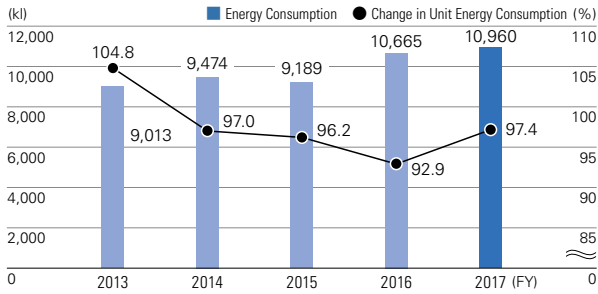


CO₂ Emissions and Energy Consumption

JFE Group

◆ Status on Non-consolidated Basis

Energy Consumption and Change in Unit Energy Consumption

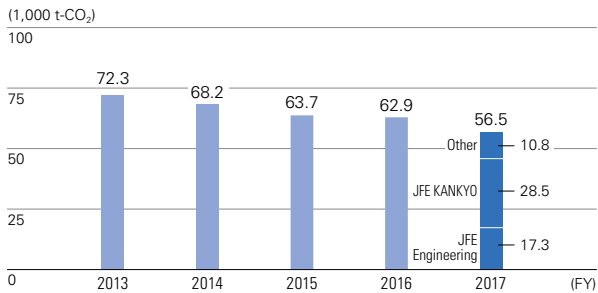


Data for certain fiscal years have been recalculated retroactively for improved accuracy.

JFE Steel

◆ Status as a Group

CO₂ Emissions



Notes: Data cover CO₂ emission from Energy Sources by JFE Engineering and 10 domestic subsidiaries. Data for certain fiscal years have been recalculated retroactively for improved accuracy.

JFE Engineering

JFE Shoji Trade

CO₂ Emissions of JFE Engineering Group Subsidiaries (FY2017)

(t-CO₂)

Name of Company	CO ₂ Emissions
JFE KANKYO Corporation	28,460
JFE Engineering Corporation	17,260
J Farm Corporation	2,809
Fujikako, Inc.	2,263
JFE Pipeline Engineering Corporation	1,911
NORTHERN JAPAN MACHINERY Corporation	1,282
Tohoku Dock Ironworks Corporation	1,006
Asuka Soken Co., Ltd.	716
JFE Environment Service Corporation	579
JFE Technos Corporation	175
JFE Aqua Machine and Service Corporation	55
Total	56,517

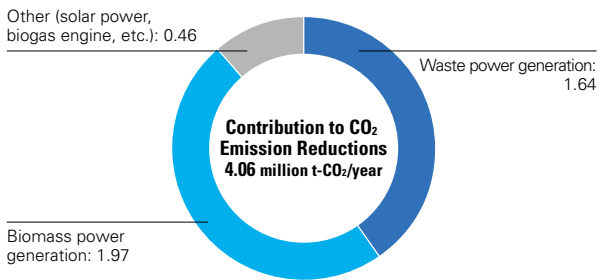
Energy Consumption of JFE Engineering Group Subsidiaries (FY2017)

(GJ)

Name of Company	Energy Consumption
JFE KANKYO Corporation	518,122
JFE Engineering Corporation	424,821
J Farm Corporation	52,592
Fujikako, Inc.	44,524
JFE Pipeline Engineering Corporation	28,281
NORTHERN JAPAN MACHINERY Corporation	20,907
Tohoku Dock Ironworks Corporation	18,058
Asuka Soken Co., Ltd.	12,005
JFE Environment Service Corporation	8,368
JFE Technos Corporation	2,909
JFE Aqua Machine and Service Corporation	1,111
Total	1,131,698

Technologies to Reduce Environmental Load

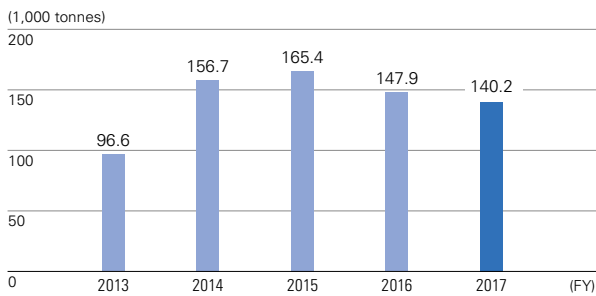
Contribution to CO₂ Emission Reductions by Renewable Energy Plants



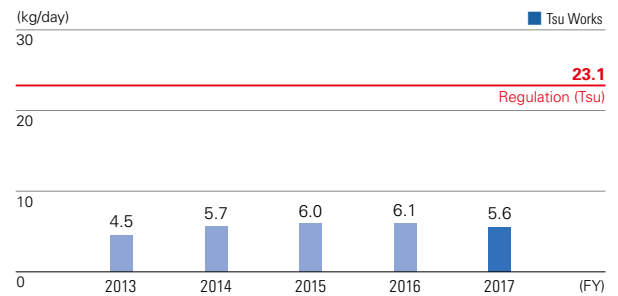
Disposed Substances

◆ Release into Water Area

Wastewater



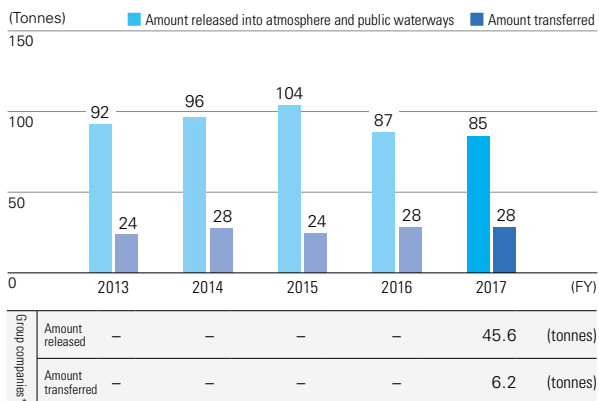
Chemical Oxygen Demand (COD) in Wastewater Released Publicly



Note: This report uses the maximum value of each year.

Management of Chemical Substances

Release and Transfer of PRTR-Registered Substances



*4 JFE Engineering consolidated subsidiaries in Japan.

JFE Group

Substances Reported under PRTR (all Companies)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	16.8	0	0	0	0	0.88
80	Xylene	42.0	0	0	0	0	2.4
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.80
296	1,2,4-trimethylbenzene	1.6	0	0	0	0	0.087
297	1,3,5-trimethylbenzene	0.72	0	0	0	0	0.038
300	Toluene	23.5	0	0	0	0	2.4
309	Nickel compounds	0	0	0	0	0	2.6
412	Manganese and its compounds	0	0	0	0	0	18.2
448	Methylenebis(4,1-phenylene) diisocyanate	0	0	0	0	0	1.1
Total		84.7	0	0	0	0	28.4
		84.7				28.4	
		113.1					

JFE Steel

Substances Reported under PRTR (Yokohama Head Office (former Tsurumi Works))

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
80	Xylene	1.5	0	0	0	0	0.25
300	Toluene	11.0	0	0	0	0	1.7
412	Manganese and its compounds	0	0	0	0	0	0.66
448	Methylenebis(4,1-phenylene) diisocyanate	0	0	0	0	0	1.1
Total		12.5	0	0	0	0	3.7
		12.5				3.7	
		16.2					

JFE Engineering

JFE Shoji Trade

Substances Reported under PRTR (Tsu Works)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	16.8	0	0	0	0	0.88
80	Xylene	40.5	0	0	0	0	2.1
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.80
296	1,2,4-trimethylbenzene	1.6	0	0	0	0	0.087
297	1,3,5-trimethylbenzene	0.72	0	0	0	0	0.038
300	Toluene	12.5	0	0	0	0	0.66
309	Nickel compounds	0	0	0	0	0	2.6
412	Manganese and its compounds	0	0	0	0	0	17.5
Total		72.2	0	0	0	0	24.7
		72.2				24.7	
		96.9					

◆ All Substances Reported under PRTR by Group Companies

Substances Reported under PRTR (JFE KANKYO Corporation)

(Tonnes/year, for dioxins: g-TEQ/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
1	Zinc compounds (water-soluble)	0	0.0004	0	0	0	0
243	Dioxins	0.029	0	0	0	0	1.4
Subtotal		0	0.0004	0	0	0	0
Total		0.0004				0	

The total does not include dioxins.

Substances Reported under PRTR (Fujikako, Inc.)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
240	Styrene	11.4	0	0	0	0	0.45
265	Tetrahydromethylphthalic anhydride	0	0	0	0	0	0.035
415	Methacrylic acid	0.12	0	0	0	0	0.0012
Subtotal		11.6	0	0	0	0	0.49
Total		11.6				0.49	

Substances Reported under PRTR (Tohoku Dock Ironworks Corporation)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	8.5	0	0	0	0	1.3
80	Xylene	15.0	0	0	0	0	2.4
87	Chromium and chromium(III) compounds	0.0007	0	0	0	0	0.018
300	Toluene	4.0	0	0	0	0	0.6
412	Manganese and its compounds	0.002	0	0	0	0	0.015
309	Nickel compounds	0.0002	0	0	0	0	0.0017
Subtotal		27.5	0	0	0	0	4.3
Total		27.5				4.3	

Substances Reported under PRTR (NORTHERN JAPAN MACHINERY Corporation)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	2.9	0	0	0	0	0
80	Xylene	3.6	0	0	0	0	0
Subtotal		6.5	0	0	0	0	0
Total		6.5				0	

JFE Group

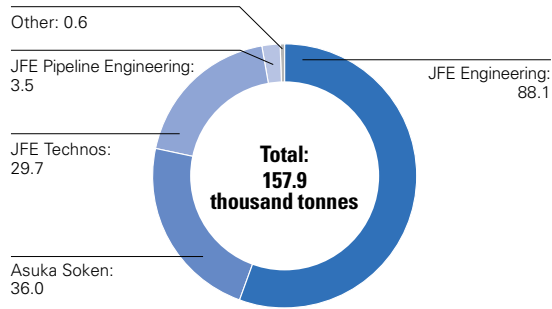
JFE Steel

JFE Engineering

JFE Shoji Trade

Waste Disposal in Each Section and Works

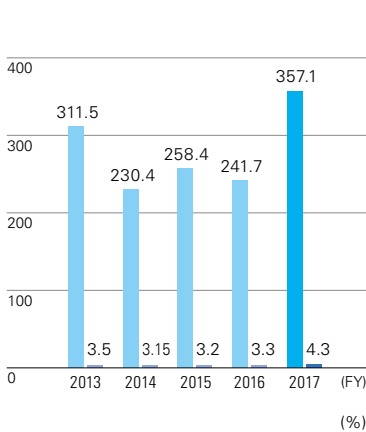
JFE Engineering Group Waste Disposal



Offices

Yokohama Head Office

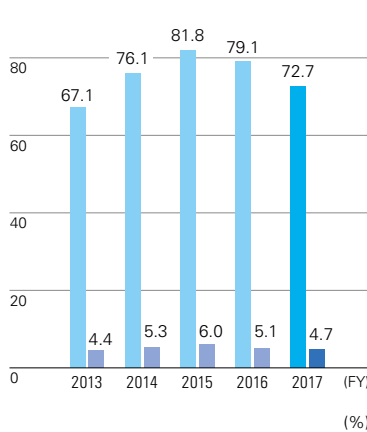
(Tonnes) ■ Generation volume ■ Final disposal volume



	2013	2014	2015	2016	2017
Recycling rate (targets)	98.0	98.0	98.0	98.0	98.0
Recycling rate (results)	98.8	98.5	98.7	98.5	98.7

Tsu Works

(Tonnes) ■ Generation volume ■ Final disposal volume



	2013	2014	2015	2016	2017
Recycling rate (targets)	92.0	92.0	92.0	92.0	92.0
Recycling rate (results)	88.1	87.4	91.5	88.9	89.0

JFE Group

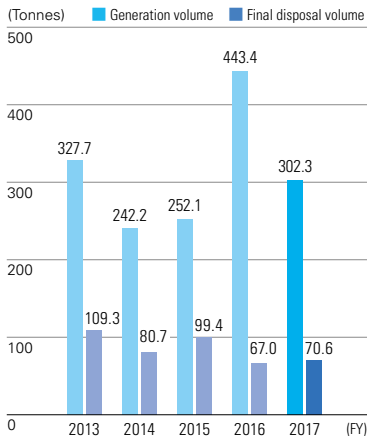
JFE Steel

JFE Engineering

JFE Shoji Trade

Plants

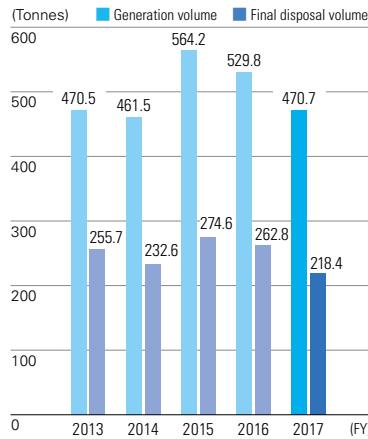
Tsurumi Works



(%)

	2013	2014	2015	2016	2017
Recycling rate (targets)	56.0	58.0	58.0	58.0	55.0
Recycling rate (results)	53.6	57.5	49.8	78.9	61.0

Tsu Works

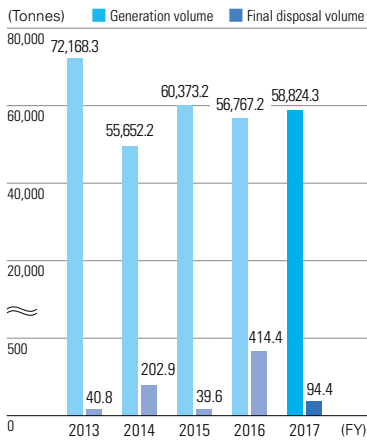


(%)

	2013	2014	2015	2016	2017
Recycling rate (targets)	30.0	30.0	31.0	31.0	31.0
Recycling rate (results)	30.1	33.9	34.0	32.5	37.0

Construction Sites

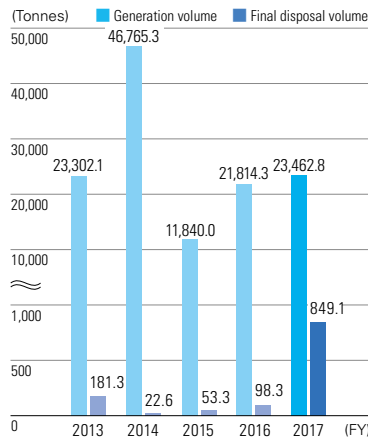
Rubble



(%)

	2013	2014	2015	2016	2017
Recycling rate (targets)	99.5	99.5	99.5	99.5	99.5
Recycling rate (results)	99.9	99.6	99.9	99.3	99.8

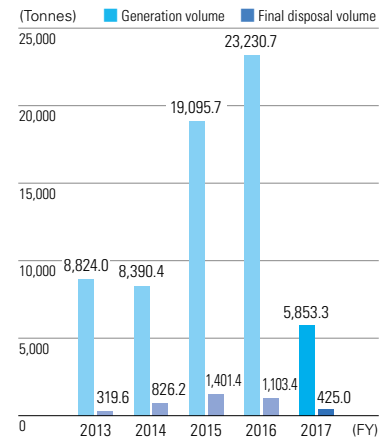
Sludge



(%)

	2013	2014	2015	2016	2017
Recycling rate (targets)	95.0	95.0	95.0	95.0	95.0
Recycling rate (results)	99.2	99.95	99.5	99.5	96.3

Industrial Wastes, Excluding Rubble and Sludge



(%)

	2013	2014	2015	2016	2017
Recycling rate (targets)	85.0	85.0	85.0	85.0	85.0
Recycling rate (results)	96.2	93.3	91.7	95.0	92.2

JFE Shoji Trade

JFE Group

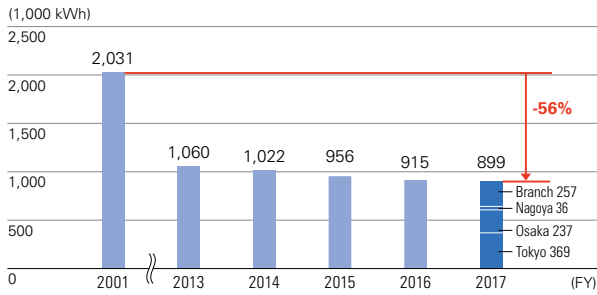
JFE Steel

JFE Engineering

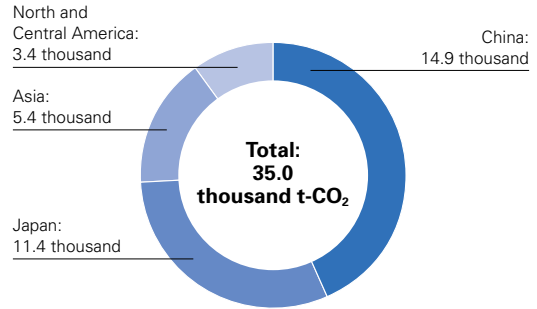
JFE Shoji Trade

Electricity Consumption and CO₂ Emissions

Electric Power Consumption of JFE Shoji Trade



CO₂ Emissions of the JFE Shoji Trade Group

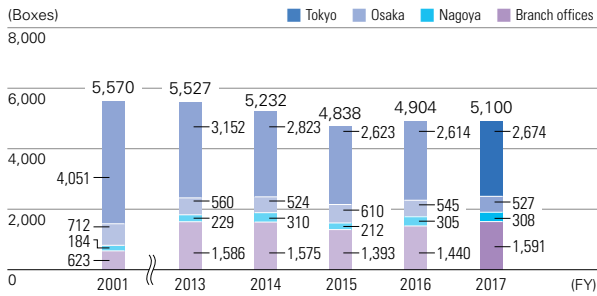


Note: The graph shows CO₂ emissions from electric power consumption by JFE Shoji Trade and 33 domestic and overseas consolidated subsidiaries (steel processing companies).

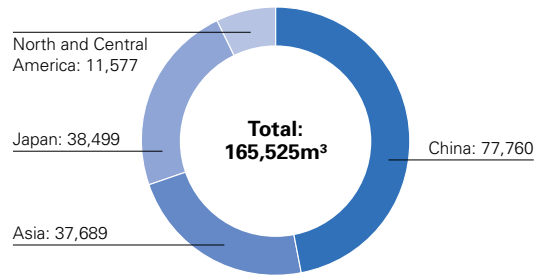
CO₂ Emission Factor for Purchased Energy
 Japan: unadjusted emission factors of each electric power company
 Overseas: based on each country's GHG protocol

Input Materials

Paper Used (Copier Papers)



Water Use of the JFE Shoji Trade Group (m³)



Note: The graph shows water used by JFE Shoji Trade and 33 domestic and overseas steel processing companies.

Independent Assurance Statement



Independent Assurance Statement

September 11, 2018

Mr. Eiji Hayashida
Representative Director, President and CEO of JFE Holdings, Inc.

1. Purpose

We, Sustainability Accounting Co., Ltd., have been engaged by JFE Holdings, Inc., ("the Company") to provide limited assurance on the Company's environmental performance indicators during the fiscal year 2017 reported in JFE Group CSR REPORT 2018, which indicate 54.9 million tons of CO₂ for Scope1, 7.4 million tons of CO₂ for Scope2 and 16.3 million tons of CO₂ for Scope3, and 241 million tons of industrial water accepted by the Company (collectively, "the environmental performance indicators"). The purpose of this process is to express our conclusion on whether the environmental performance indicators were calculated in accordance with the Company's standards. The Company's management is responsible for calculating the environmental performance indicators. Our responsibility is to independently carry out a limited assurance engagement and to express our assurance conclusion.

2. Procedures Performed

We conducted our assurance engagement in accordance with International Standard on Assurance Engagement 3000 (ISAE 3000) and International Standard on Assurance Engagement 3410 (ISAE 3410). The key procedures we carried out included:

- Interviewing the Company's responsible personnel to understand the Company's standards and reviewing the Company's standards
- Visiting to one of the Company's sites
- Performing cross-checks on a sample basis and performing a recalculation to determine whether the environmental performance indicators were calculated in accordance with the Company's standards.

3. Conclusion

Based on the procedures performed, nothing has come to our attention that causes us to believe that the environmental performance indicators have not been calculated in all material respects in accordance with the Company's standards.

We have no conflict of interest relationships with the Company.

A handwritten signature in black ink, appearing to read "Takashi Fukushima", is written over a horizontal line.

Takashi Fukushima
Representative Director, Sustainability Accounting Co., Ltd.

Comparison with Environmental Reporting Guidelines 2012

(Ministry of the Environment, Japan)

Report Parameters and Summary						
Item	CSR Report					Environmental Data Book Pages
	Pages	Content	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Report Profile						
(1) Report boundary and reporting period	1	Editorial Policy	○	○	○	1
(2) Organizations coverage ratio and reporting period difference	—	—				—
(3) Reporting policies	1	Editorial Policy	○	○	○	—
	Web	GRI Content Index	○	○	○	—
(4) Policies for selecting a type of report	1	Editorial Policy	○	○	○	—
	Back cover	Inquires	○	○	○	Back cover
2. Chairman's Statement/CEO's Statement						
	3-4	Message from the CEO	○	○	○	—
3. Summary						
(1) Overview of environmentally focused management	5-6	Sixth Medium-Term Business Plan	○	○	○	—
	7-8	JFE in Society	○	○	○	—
	9-10	JFE Group's Value Chain	○	○	○	—
(2) Overview of KPI trends	—	—				—
(3) Summary of activities to address an individual environmental issue	15-18	Material CSR Issues of the JFE Group	○	○	○	7-8
4. Material Balance						
	29-30	Materials Flow	○	○		7-8

Information and Indicators on How Environmentally Focused Management Including Environmental Management is Working						
Item	CSR Report					Environmental Data Book Pages
	Pages	Content	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Environmental Policies, Visions and Business Strategies						
(1) Environmental policies	2	Standards of Business Conduct	○	○	○	—
	25	Environmental Philosophy and Strategies	○	○	○	—
(2) Material issues, visions and business strategies	3-4	Message from the CEO	○	○	○	—
	5-6	Sixth Medium-Term Business Plan	○	○	○	—
	9-10	JFE Group's Value Chain	○	○	○	—
	13-18	Material CSR Issues of the JFE Group	○	○	○	—
	28	Environmental Risks and Opportunities	○	○	○	—
	37	Water-related Risks and Mitigation	○			—
2. Organizational Systems and Governance						
(1) Organizational systems for environmentally focused management	25-26	Environmental management	○	○	○	3
	67-68	Third-party Comments				—
(2) Environmental risk management system	25-28	Environmental management	○	○	○	—
(3) Compliance with environmental regulations	26	Environmental audits	○	○	○	—
	37-38	Protecting the Environment	○	○		—
3. Responsiveness of Stakeholder Issues						
(1) Responsiveness to stakeholder issues	25	Environmental Philosophy and Strategies	○	○	○	—
	28	Value Chain Initiatives / Environmental Risks and Opportunities	○	○	○	—
(2) Philanthropy related to the environment	33	Japanese Steel Industry Initiatives	○			—
	34-35	Efforts for the Commitment to a Low-Carbon Society	○			—
	47	Environmental Communication	○	○	○	—
4. Environmental Initiatives in the Value Chain						
(1) Strategies and environmental policies in the value chain	9-10	JFE Group's Value Chain	○	○	○	—
	17-18	KPIs for Material CSR Issues	○	○	○	—
	28	Value Chain Initiatives	○	○	○	—
	28	Environmental Risks and Opportunities	○	○	○	—
	31	Calculation of Greenhouse Gas Emissions (Scope 3)	○	○	○	4
	34-35	Efforts for the Commitment to a Low-Carbon Society	○			—
	35	CO ₂ Reduction in the Value Chain	○			11
(2) Green purchasing and procurement	28	Value Chain Initiatives	○	○	○	—
(3) Products and services designed for mitigating environmental impacts	34-35	Efforts for the Commitment to a Low-Carbon Society	○			—
	35	CO ₂ Reduction in the Value Chain	○			11
	39-41	Resource Recycling	○	○	○	5-6
	42-46	Eco-friendly Products and Technologies	○	○	○	—
(4) New environmental technologies and research and development	27	Environmental Accounting	○	○		3-4
	33	Japanese Steel Industry Initiatives	○			—
	42-46	Eco-friendly Products and Technologies	○	○	○	—
(5) Environmentally sound transportation	31	Calculation of Greenhouse Gas Emissions (Scope 3)	○	○	○	—
	35	CO ₂ Reduction in the Value Chain	○			11
(6) Resource exploitations and real estate development/investment with less environmental impacts	27	Environmental Accounting	○	○		3-4
(7) Waste management and recycling	39-41	Resource Recycling	○	○	○	5-6, 10, 13, 27-28

Information and Indicators on Environmental Impacts of Business Activities and Environmental Initiatives Undertaken to Mitigate Them						
Item	CSR Report					Environmental Data Book Pages
	Pages	Content	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Resources Used and Energy Consumption						
(1) Total energy consumption and initiatives to reduce it	29-30	Material Flow	○	○		7-8
	31-32	Energy Savings and CO ₂ Reduction in Steelmaking	○			9-11
	35	CO ₂ Reduction in the Value Chain	○			—
	36	CO ₂ Reduction Initiatives		○	○	23-24,29
(2) Total materials used and initiatives to reduce them	29-30	Material Flow	○	○		7-8
(3) Water withdrawal and initiatives to reduce it	17-18	KPIs for Material CSR Issues	○	○		—
	29-30	Material Flow	○	○		7-8
	39	Efficient Use of Water in Response to Water Risks	○	○		9-10,29
2. Recycled Input Resources (within the organizational boundary)						
	17-18	KPIs for Material CSR Issues	○	○	○	—
	29-30	Material Flow	○	○		7-8
	39-41	Resource Recycling	○	○	○	7-8,10,13,27-28
3. Products and Services and Environmental Impacts Arising from Production						
(1) Total products manufactured or goods sold	29-30	Material Flow	○	○		7-8,9,22
(2) Greenhouse gas emissions and initiatives to reduce them	17-18	KPIs for Material CSR Issues	○	○	○	—
	29-30	Material Flow	○	○		7-8
	31-36	Climate Change Mitigation	○	○	○	4,10-11,23-24,29
(3) Total water discharge and initiatives to reduce it	29-30	Material Flow	○	○		7-8
	39	Efficient Use of Water in Response to Water Risks	○	○		9-10,13,24
	17-18	KPIs for Material CSR Issues	○	○		—
(4) Effluents and nuisance, and initiatives to reduce them	29-30	Material Flow	○	○		7-8
	37	Controlling Air Emissions	○	○		12,14
(5) Release and transfer of chemical substances and initiatives to reduce them	17-18	KPIs for Material CSR Issues	○	○	○	—
	29-30	Material Flow	○	○		7-8
	37	Preventing Water Pollution	○	○		13,24
(6) Total weight of waste generated, waste disposed by land filling or incineration and initiatives to reduce them	38	Management of Chemical Substances and Emission Control	○	○		14-21,24-26
	17-18	KPIs for Material CSR Issues	○	○	○	—
	29-30	Material Flow	○	○		7-8
(7) Significant spills of hazardous substances and measures taken for preventing them	39-41	Resource Recycling	○	○	○	5-6,13,27-28
	38	Management of Chemical Substances and Emission Control	○	○		14-21,24-26
4. Conservation of Biological Diversity and the Sustainable Use of its Components						
	7-8	JFE in Society	○	○	○	—
	44-46	Eco-friendly Products and Technologies	○	○	○	—
	47	Disclosure and Exchange of Information	○	○	○	—

Information and Indicators on the Economic and Social Contexts of Environmentally Focused Management						
Item	CSR Report					Environmental Data Book Pages
	Pages	Content	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Economic Contexts of Environmentally Focused Management						
(1) Economic contexts in an enterprise	27	Environmental Accounting	○	○		3-4
	28	Environmental Risks and Opportunities	○	○	○	—
(2) Economic contexts in society	28	Environmental Risks and Opportunities	○	○	○	—
2. Social Contexts of Environmentally Focused Management						
	19-21	CSR Management	○	○	○	—
	54-56	Local Communities	○	○	○	—

Miscellaneous Contents to Be Disclosed						
Item	CSR Report					Environmental Data Book Pages
	Pages	Content	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Events after the Reporting Period						
(1) Events after the reporting period	—					—
(2) Extraordinary events	—					—
2. Assurance and Other Measures to Enhance Reliability of Environmental Information						
	66	Independent Assurance Statement				30



JFE

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