



JFE Group CSR REPORT 2019

Environmental Data Book

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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 2019" to gain a more comprehensive understanding of JFE's environmental initiatives.



Scope of Report

Reporting Period

FY2018 (April 1, 2018 to March 31, 2019)

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 30 consolidated subsidiaries (total: 31 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

5 overseas companies

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

• JFE Engineering Group

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

J&T Recycling 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 33 domestic and overseas consolidated subsidiaries (steel-processing companies) (total: 34 companies)

19 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, 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 FY2016.

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): 2,830.6 billion yen
- Employees (consolidated): 44,975

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 (main) 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: +81-569-24-2035

• Main business

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



Sendai Works

1-6-1 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.

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-shi, Kanagawa 230-8611
- Phone: +81-45-505-7435 (main) Fax: +81-45-505-8953 (PR)
- Net sales (consolidated): 485.8 billion yen
- Employees (consolidated): 9,569

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-shi, Osaka 530-8318
- Phone: +81-6-4795-7000 Fax: +81-6-4795-7400
- Net sales (consolidated): 1,125.8 billion yen
- Employees (consolidated): 7,498

Starting with the fiscal year under review, the JFE Group is now reporting under the International Financial Reporting Standards (IFRS) instead of the Japanese Generally Accepted Accounting Principles (JGAAP).

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)

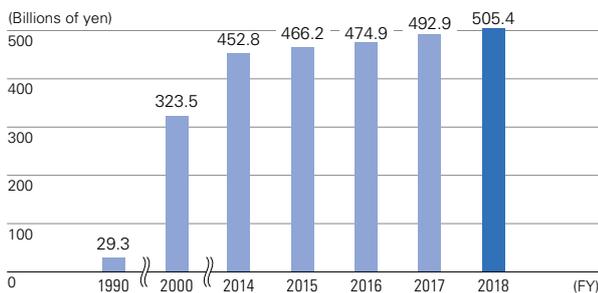
JFE Steel Corporation	JFE MINERAL COMPANY, LTD.	JFE LOGISTICS CORPORATION
	Mizushima Ferroalloy Co., Ltd.	JFE Techno-Research Corporation (JFE-TEC)* ¹
	JFE Material Co., Ltd.	JFE Chemical Corp.
	JFE Plastic Resource Corporation	JFE Metal Construction Inc.* ¹
	JFE Bars & Shapes Corporation	JFE KYOWA YOKI CO. LTD.* ¹
	JFE Galvanizing & Coating Co., Ltd.	Japan Pail Corporation* ¹
	JFE Container Co., Ltd.	JFE SETOUCHI LOGISTICS CORPORATION* ¹
	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	J&T Recycling 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 Trade Matech Inc.* ¹
	JFE Shoji Kohnan Steel Center Co., Ltd.	Kawasho Foods Corporation* ¹
	Taisei Kogyo Corporation	K&I Tubular Corporation* ¹
	Toyo Kinzoku Corporation	Tohsen Corporation* ¹
	Naigai Steel Corporation	Hoshi Kinzoku Corporation* ¹
	Nihon Jiseizai Kogyo Co., Ltd.	Dongguan JFE Shoji Steel Products Co., Ltd.
	Hokuriku Steel Co., Ltd.	Guangzhou JFE Shoji Steel Products Co., Ltd.
	Mizushima Steel Corporation	Jiangsu JFE Shoji Steel Products Co., Ltd.
	Mizushima Metal Products Corporation	Zhejiang JFE Shoji Steel Products Co., Ltd.
	JFE Shoji Electrical Steel Co., LTD.	JFE SHOJI STEEL PHILIPPINES, INC.
	JFE Shoji Usuitakenzai Corporation* ¹	CENTRAL METALS (Thailand) Ltd.
	JFE Shoji Electronics Corporation* ¹	JFE SHOJI STEEL VIETNAM CO., LTD.
	JFE Shoji Pipe & Fitting Trade Corporation* ¹	JFE SHOJI STEEL HAI PHONG CO., LTD.
	JFE Shoji Service Corporation* ¹	JFE SHOJI STEEL MALAYSIA SDN. BHD.
	JFE Shoji Machinery & Materials Corporation* ¹	PT. JFE SHOJI STEEL INDONESIA
	JFE Shoji Trade Steel Construction Materials Corporation* ¹	JFE SHOJI STEEL DE MEXICO, S.A. DE C.V.
	JFE Shoji Terre One Corporation* ¹	JFE SHOJI STEEL INDIA PVT. LTD.
	JFE Shoji Business Support, Inc.* ¹	

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

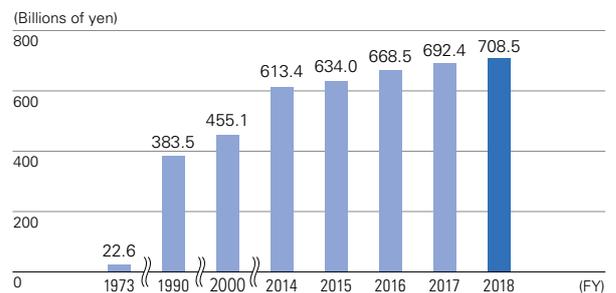
JFE Group's Environmental Accounting

● Environmental Accounting

Cumulative Investment in Energy Saving



Cumulative Investment in Environmental Preservation Measures



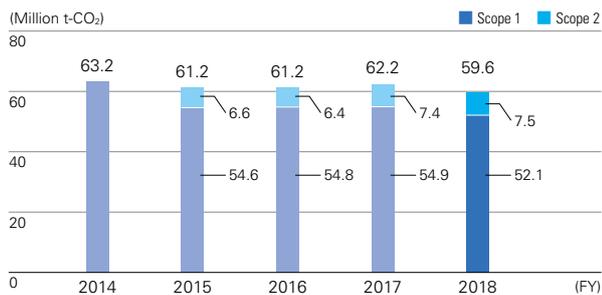
Breakdown of Environmental Costs

Main Items		FY2017		FY2018	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	0.2	2.5	0.3	2.7
Global warming countermeasures	Saving and efficiently use energy	18.0	27.8	12.4	28.6
Conservation of natural resources	Recycling industrial water	2.8	17.1	2.4	17.8
	Recycling and waste management of internally generated materials, etc.	0.09	5.3	1.77	4.8
Environmental protection	Air pollution countermeasures	19.1	35.6	9.9	31.6
	Water pollution countermeasures	1.6	9.2	1.8	10.0
	Prevention of soil contamination, noise, vibration and subsidences	0.02	0.7	0.00	0.6
Other	Charges, etc.	-	1.4	-	1.6
R&D	Technologies for protecting the environment, saving energy and preventing global warming	1.4	11.7	1.2	12.9
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions and public relations	-	0.7	-	0.7
Total		43.3	112.1	29.8	111.3

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



CO₂ Emission Factor for Purchased Electricity in FY2018

- JFE Steel uses the emission factor of the Commitment to a Low Carbon Society of the Japan Iron and Steel Federation for energy purchased in FY2017.
- JFE Steel's domestic consolidated subsidiaries, the JFE Engineering Group, and the JFE Shoji Trade Group apply the adjusted emission factors of each electric power company for each fiscal year.
- Overseas: based on each country's GHG protocol

Notes: Data for JFE Steel include CO₂ emissions from non-energy sources. Starting with FY2018, data for JFE Steel's subsidiaries and JFE Engineering's subsidiary include CO₂ emissions from non-energy sources.

CO₂ Emissions of the JFE Group (FY2018)

JFE Steel	JFE Engineering	JFE Shoji Trade
59,357 thousand t-CO ₂	212 thousand t-CO ₂	36 thousand t-CO ₂
99.58%	0.36%	0.06%

Data cover 76 companies, including JFE Steel and 30 major domestic and overseas subsidiaries, JFE Engineering and 10 major domestic subsidiaries, and JFE Shoji Trade and 33 major domestic and overseas subsidiaries.

Scope 3 Emissions of the JFE Group

Category	CO ₂ Emissions (Thousand t-CO ₂)		Calculation Method
	FY2018		
1	Purchased goods and services	13,371	Purchase prices for materials and outsourced work multiplied by CO ₂ emission factor*
2	Capital goods	1,180	Capital investment cost multiplied by CO ₂ emission factor*
3	Fuel- and energy-related activities not included in Scope 1 or Scope 2	370	Annual consumption of electricity and steam multiplied by CO ₂ emission factor*
4	Upstream transportation and delivery	491	Transportation distance stated in reports (based on Energy Saving Act) multiplied by CO ₂ emission factor*
5	Waste generated in operations	100	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	49	Number of employees multiplied by CO ₂ emission factor*
15	Investments	1,186	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, 3, 4, 5) JFE Steel, 25 JFE Steel domestic subsidiaries, JFE Engineering, and JFE Shoji Trade (Category 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 (FY2018)

Content	Volume
Containers and packaging plastic bought at auction for FY2019	0.10 million tonnes
Waste plastic reused in iron and steelmaking process	0.12 million tonnes
Used fluorescent tubes processed	20 million tubes
Used consumer appliances processed	0.50 million units

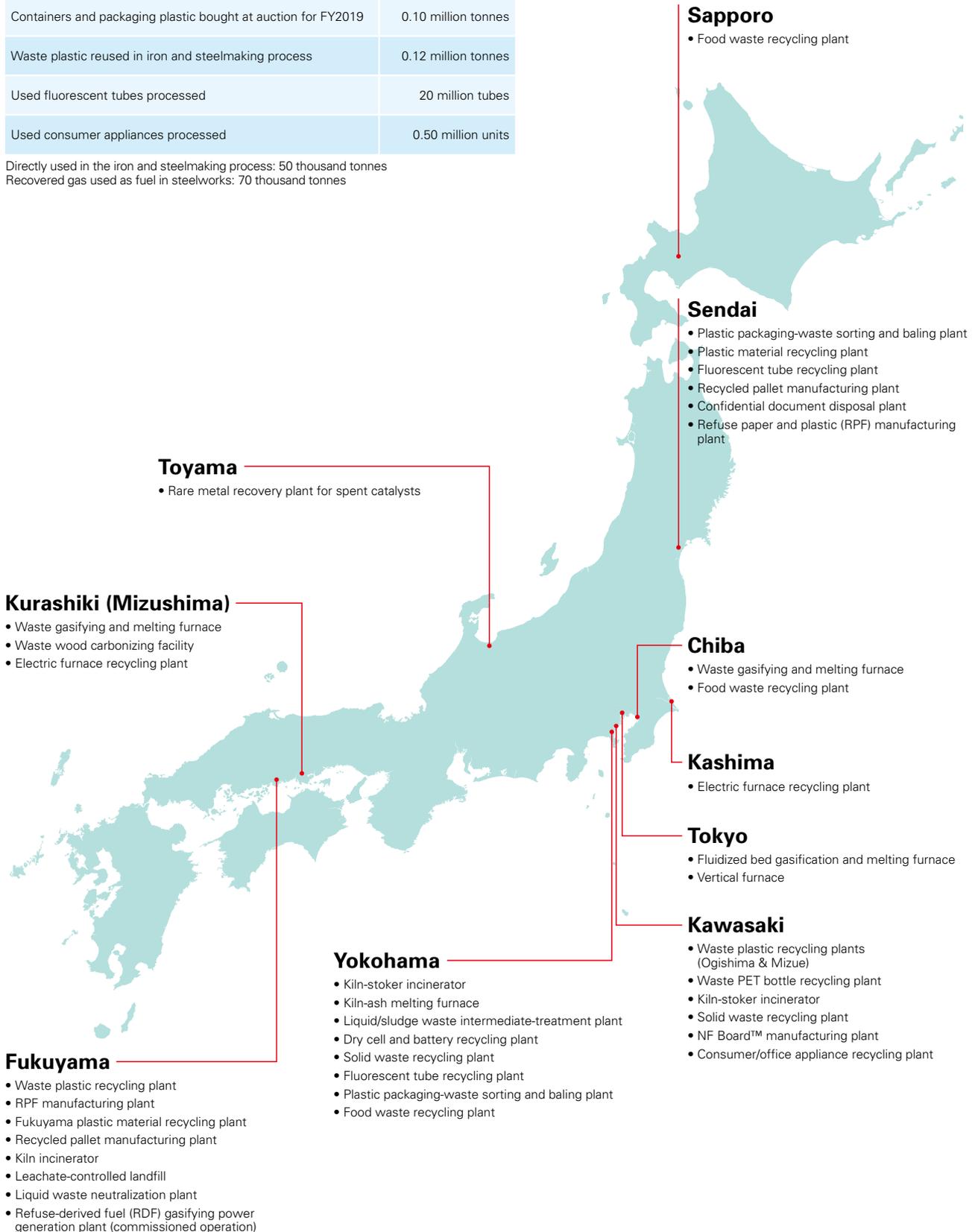
Directly used in the iron and steelmaking process: 50 thousand tonnes
 Recovered gas used as fuel in steelworks: 70 thousand tonnes

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade



JFE Group's Recycling Business List

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

JFE Group's Recycling Business List

District	Name of the Companies, Plants and Offices	Facilities	Addresses
Sapporo	Sapporo Bio Food Recycle Corporation	Food waste recycling plant	45-53 Nakanuma-cho, Higashi-ku, Sapporo-shi, Hokkaido
Sendai	J&T Recycling Corporation Sendai 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	J&T Recycling 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
Tokyo	J&T Recycling Corporation Tokyo Waterfront Eco Clean	Fluidized bed gasification and melting furnace for industrial waste Vertical furnace for medical waste	Oumi 3-chome chisaki, Koto-ku, Tokyo, Japan Same as above
Kawasaki	J&T Recycling 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	J&T Recycling 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 Tsurumi fluorescent light recycling plant Yokohama Plastics Recycling Plant Kanazawa Recycling Plant	Liquid/sludge waste intermediate treatment plant Dry-cell and battery recycling plant Fluorescent tube recycling plant Yokohama City plastic packaging waste sorting and baling plant Solid waste recycling plant	3-1 Benten-cho, Tsurumi-ku, Yokohama-shi, Kanagawa 2-1-8 Suehiro-cho, Tsurumi-ku, Yokohama-shi, Kanagawa Same as above 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
	J&T Recycling 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 Steel

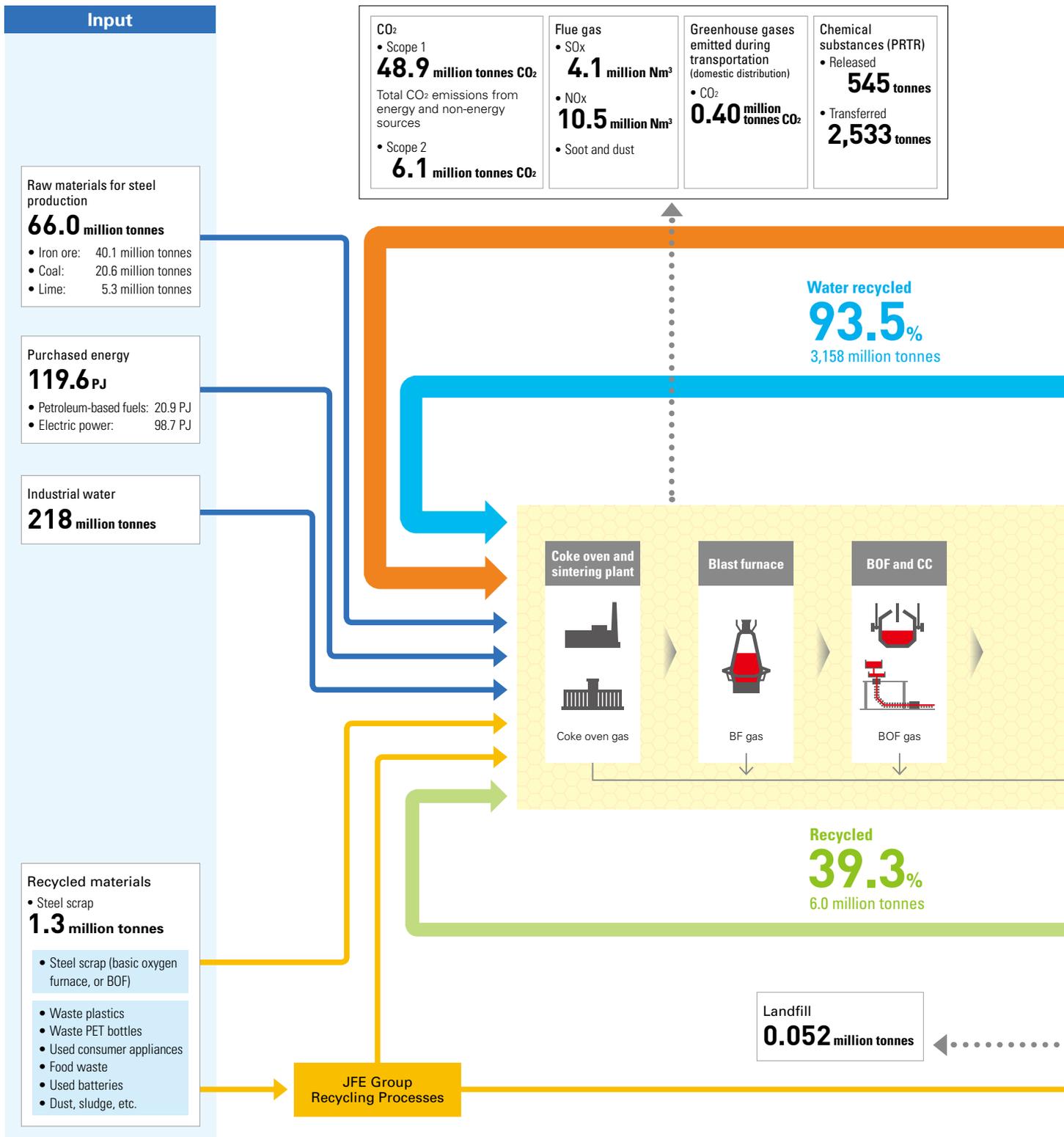
JFE Group

JFE Steel

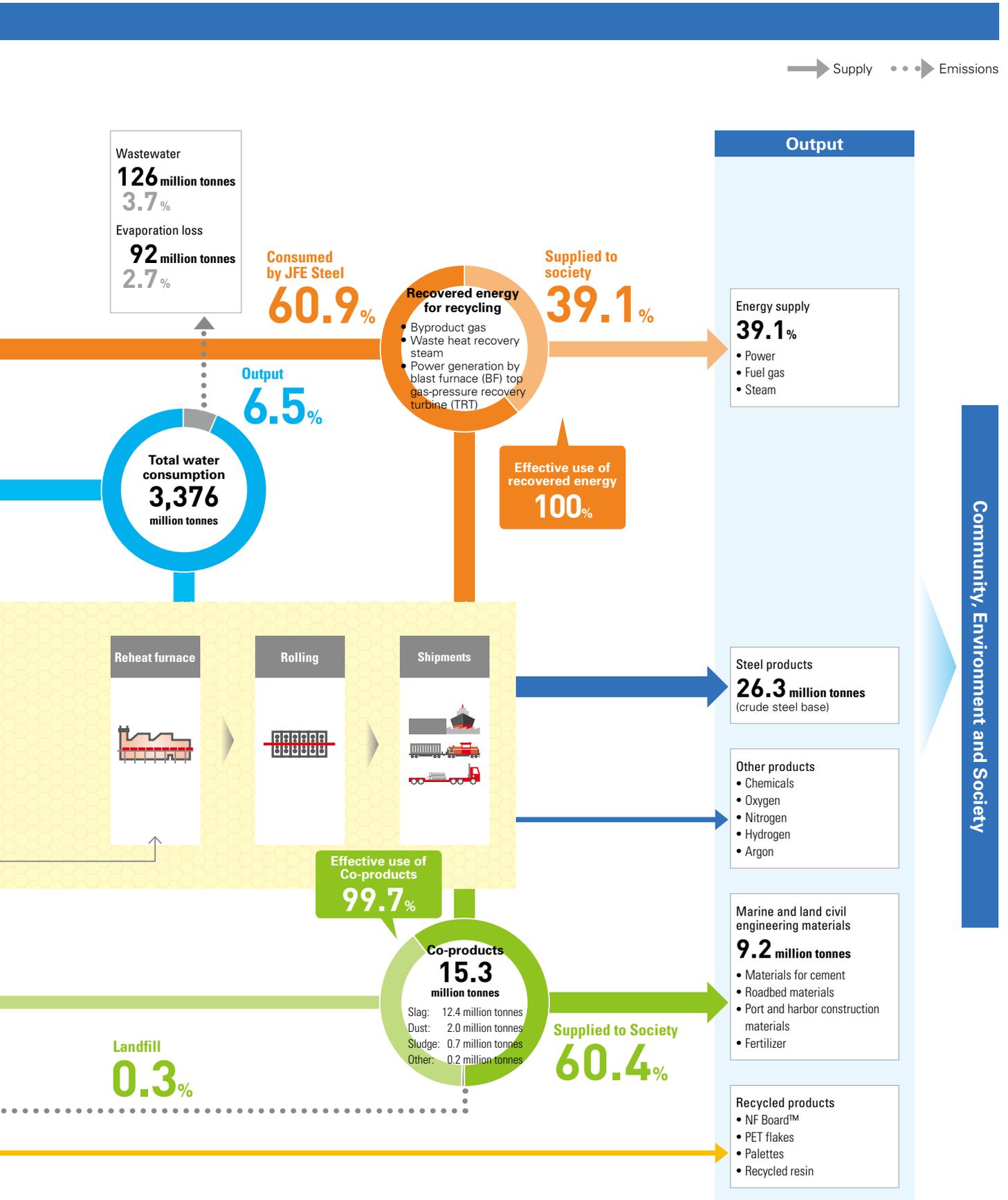
JFE Engineering

JFE Shoji Trade

Material Flow



JFE Steel works to reduce the environmental impact of its iron and 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

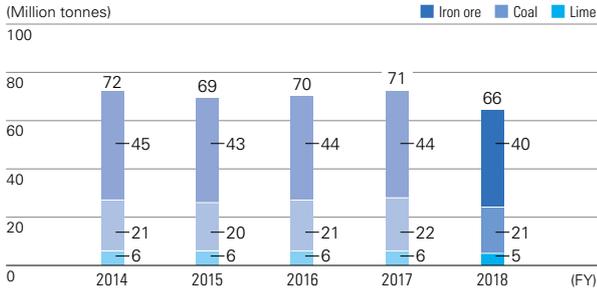
JFE Steel

JFE Engineering

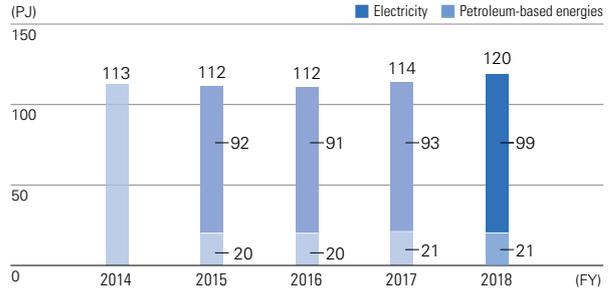
JFE Shoji Trade

Input Materials

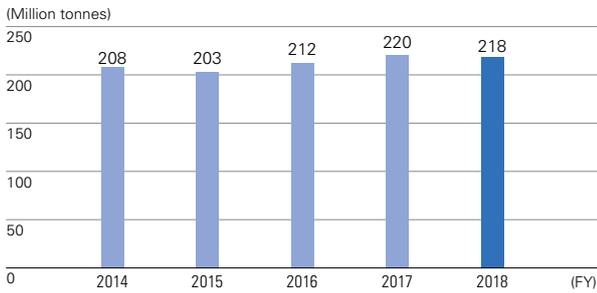
Materials for Steel Production



Purchased Energy (Electricity and Petroleum-based Energies)



Industrial Water

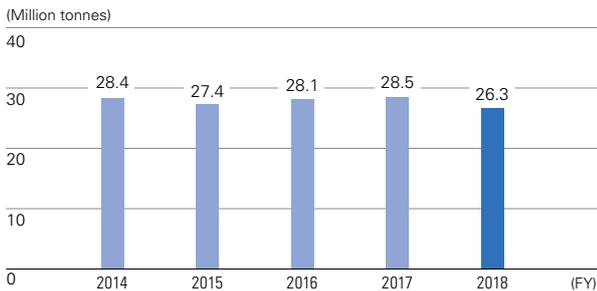


Water Used by JFE Steel Group Subsidiaries

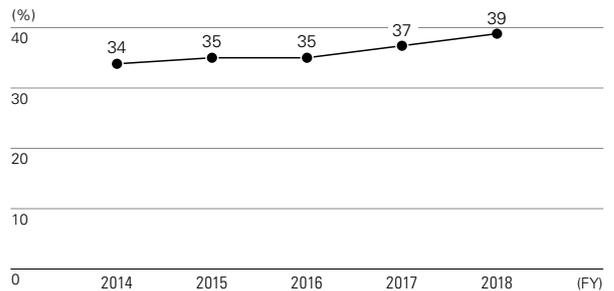
Name of Company	Amount of Water Used (m³)	Name of Company	Amount of Water Used (m³)
JFE Chemical Corp.	5,391,618	JFE KENZAI FENCE CO., LTD.	72,909
JFE Bars & Shapes Corporation	4,638,438	GECOSS CORPORATION	63,658
JFE Material Co., Ltd.	3,483,462	JFE Welded Pipe Manufacturing Co., Ltd.	59,420
JFE MINERAL COMPANY, LTD.	2,387,229	JFE ROCKFIBER CORPORATION	37,890
JFE Galvanizing & Coating Co., Ltd.	1,244,614	K-PLASHEET CORPORATION	32,026
JFE PRECISION CORPORATION	844,359	JFE Kozai Corporation	26,173
Galvatex Corporation	674,427	JFE Plastic Resource Corporation	17,649
Mizushima Ferroalloy Co., Ltd.	451,622	MIZUSHIMA RIVERMENT CORP.	14,988
JFE LIFE CORPORATION	426,992	CHIBA RIVERMENT AND CEMENT CORP.	10,978
JFE Container Co., Ltd.	297,120	JFE Pipe Fitting Mfg. Co., Ltd.	8,820
JFE LOGISTICS CORPORATION	102,380	J-Logitec Co., Ltd.	3,020
JFE Techno-wire Corporation	100,284	JFE Steel Pipe Co., Ltd.	1,537
JFE Metal Products & Engineering Inc.	86,193	Total	20,477,806

Output Products

Steel Products



Energy Supply Rate for Recovered Energy



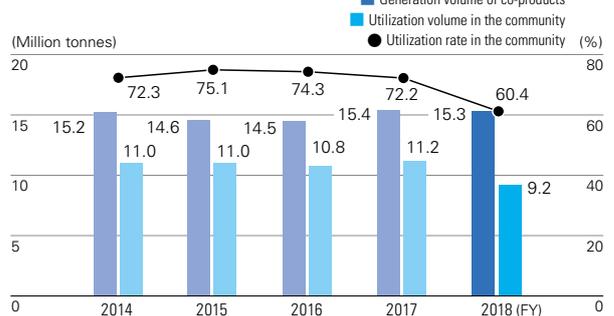
Recycled products

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

Other Products

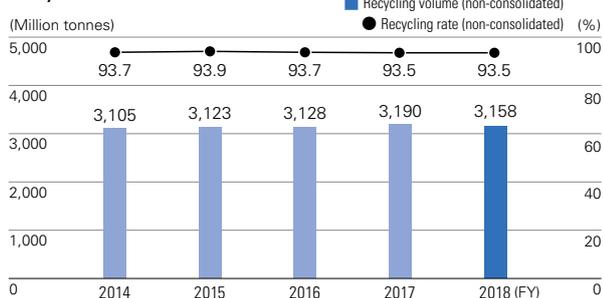
- Chemicals
- Oxygen
- Nitrogen
- Hydrogen
- Argon

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



Recycled Resources

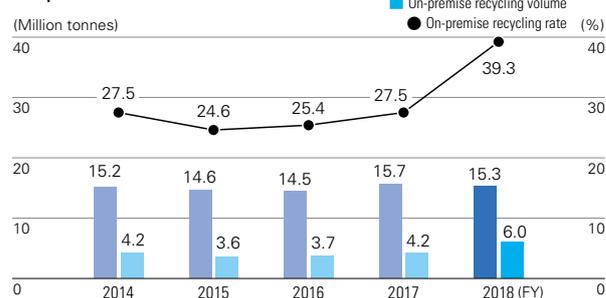
Recycled Water



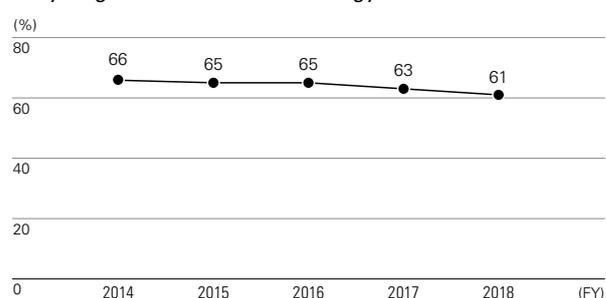
Year	Recycling volume (Million m ³)	Recycling rate (%)
2014	-	-
2015	-	-
2016	314	91
2017	280	93
2018 (FY)	289	93

*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



Data cover JFE Steel, 25 domestic subsidiaries and 5 overseas subsidiaries. Notes: Data for JFE Steel include CO₂ emissions from non-energy sources. Starting with FY2018, data for JFE Steel's subsidiaries include CO₂ emissions from non-energy sources.

- CO₂ Emission Factor for Purchased Electricity in FY2018
- JFE Steel uses the emission factor of the Commitment to a Low Carbon Society of the Japan Iron and Steel Federation for energy purchased in FY2017.
- JFE Steel's domestic consolidated subsidiaries apply the adjusted emission factors of each electric power company for each fiscal year.
- Overseas: based on each country's GHG protocol

CO₂ Emissions of JFE Steel Group Subsidiaries (FY2018)

Name of Company	CO ₂ Emissions (t-CO ₂)
JFE MINERAL COMPANY, LTD.	1,073,561
JFE Bars & Shapes Corporation	626,108
Mizushima Ferroalloy Co., Ltd.	316,314
JFE Chemical Corp.	266,271
JFE LOGISTICS CORPORATION	172,683
JFE Material Co., Ltd.	75,335
JFE Galvanizing & Coating Co., Ltd.	74,329
JFE ROCKFIBER CORPORATION	36,270
JFE Pipe Fitting Mfg. Co., Ltd.	25,129
JFE Plastic Resource Corporation	17,176
MIZUSHIMA RIVERMENT CORP.	12,877
JFE Container Co., Ltd.	11,029
J-Logitec Co., Ltd.	9,900
Galvatex Corporation	8,985
JFE Metal Products & Engineering Inc.	8,773
JFE Welded Pipe Manufacturing Co., Ltd.	7,255
JFE Techno-wire Corporation	7,168
JFE PRECISION CORPORATION	6,973
K-PLASHEET CORPORATION	6,262
JFE LIFE CORPORATION	5,227
CHIBA RIVERMENT AND CEMENT CORP.	3,813
JFE KENZAI FENCE CO., LTD.	3,794
JFE Steel Pipe Co., Ltd.	3,506
GECOSS CORPORATION	3,212
JFE Kozai Corporation	1,277
5 overseas companies	1,496,529
Total	4,279,756

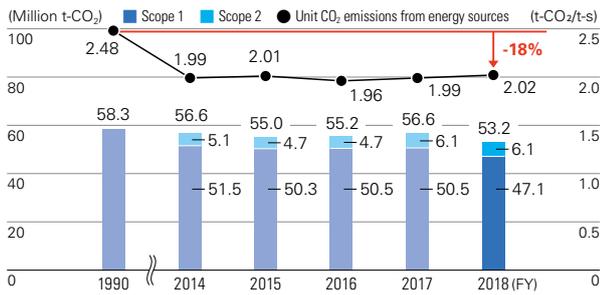
The totals do not add up due to rounding.

Energy Consumption of JFE Steel Group Subsidiaries (FY2018)

Name of Company	Consumption (GJ)
JFE Bars & Shapes Corporation	10,971,744
JFE MINERAL COMPANY, LTD.	6,386,031
JFE Chemical Corp.	5,064,276
Mizushima Ferroalloy Co., Ltd.	3,042,647
JFE LOGISTICS CORPORATION	2,495,532
JFE Galvanizing & Coating Co., Ltd.	1,474,706
JFE Material Co., Ltd.	1,238,860
JFE ROCKFIBER CORPORATION	529,568
JFE Pipe Fitting Mfg. Co., Ltd.	389,637
JFE Plastic Resource Corporation	389,074
JFE Container Co., Ltd.	228,964
JFE Metal Products & Engineering Inc.	219,947
JFE Welded Pipe Manufacturing Co., Ltd.	193,293
Galvatex Corporation	183,565
MIZUSHIMA RIVERMENT CORP.	162,414
JFE Techno-wire Corporation	148,188
J-Logitec Co., Ltd.	144,376
JFE LIFE CORPORATION	140,431
CHIBA RIVERMENT AND CEMENT CORP.	138,585
JFE PRECISION CORPORATION	128,170
K-PLASHEET CORPORATION	103,198
JFE KENZAI FENCE CO., LTD.	85,309
JFE Kozai Corporation	84,034
JFE Steel Pipe Co., Ltd.	69,991
GECOSS CORPORATION	65,740
5 overseas companies	20,046,513
Total	54,124,793

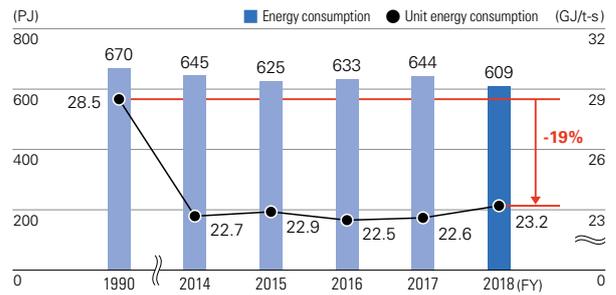
● Status of JFE Steel

CO₂ Emissions from Energy Sources and Unit CO₂ Emissions



Notes: The CO₂ emissions and emission intensity in FY2018 are calculated using the CO₂ emission factor for electricity purchased in FY2017 on the Japan Iron and Steel Federation's Commitment to a Low Carbon Society.

Energy Consumption and Unit Energy Consumption



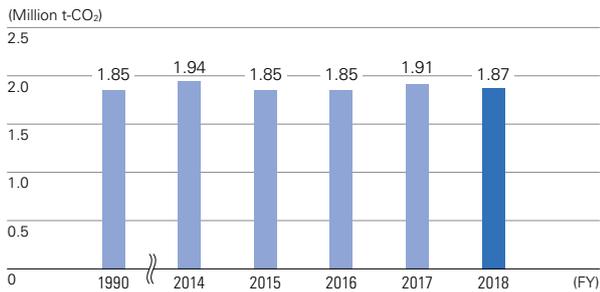
Changes in Unit CO₂ Emissions and Crude Steel Production vs. FY1990 (%)

	2014	2015	2016	2017	2018
Unit Emissions	-20	-19	-21	-20	-18
Crude Steel Production	21	16	19	21	12

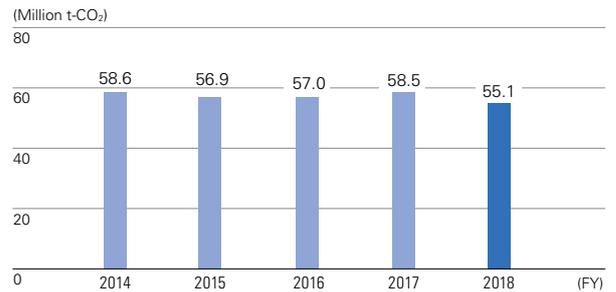
Changes in Unit Energy Consumption and Crude Steel Production vs. FY1990 (%)

	2014	2015	2016	2017	2018
Unit Emissions	-20	-20	-21	-21	-19
Crude Steel Production	21	16	19	21	12

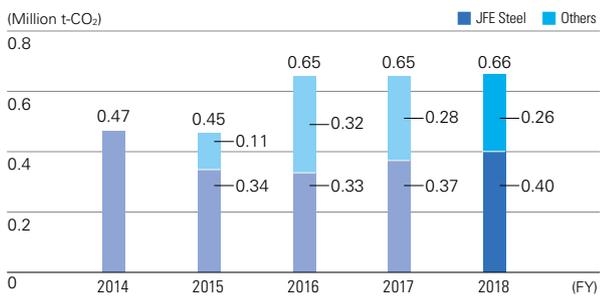
CO₂ Emissions from Non-Energy Sources of JFE Steel



Total CO₂ Emissions from Energy and Non-Energy Sources

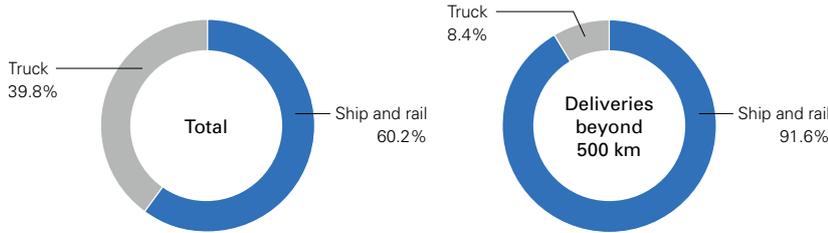


Greenhouse Gas Emitted During Transportation

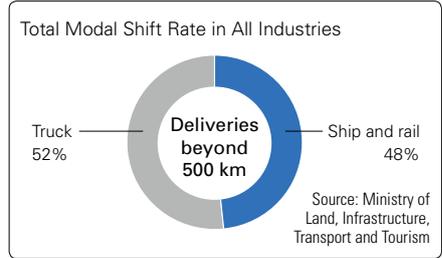


Data cover JFE Steel and 11 domestic and overseas subsidiaries, which are specified consigners designated under the Japanese Energy Saving Act. For Others, data up to FY2015 consist of emissions from trucks and railways used by the Group companies, while the scope is expanded to truck, rail and ship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

Modal Shift Rate (FY2018)



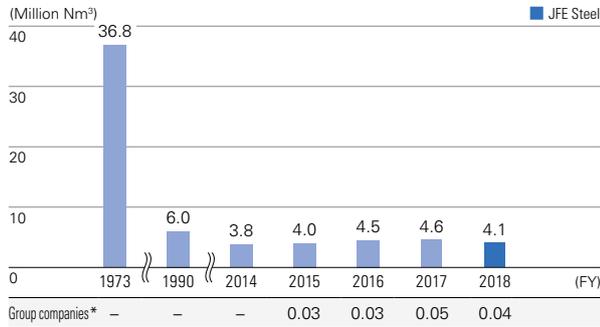
Scope of calculation: All products and half-finished products transported in Japan



Disposed Substances

Atmospheric Emissions

SOx Emissions

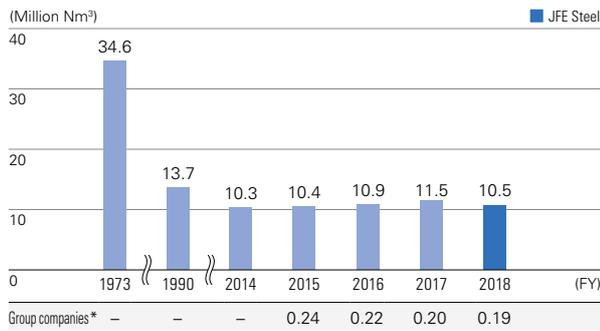


*13 JFE Steel consolidated subsidiaries in Japan.

SOx Emissions of JFE Steel Group Subsidiaries

Name of Company	SOx (Nm³)	Name of Company	SOx (Nm³)
JFE Material Co., Ltd.	10,846	K-PLASHEET CORPORATION	205
JFE Chemical Corp.	8,455	JFE Container Co., Ltd.	143
JFE MINERAL COMPANY, LTD.	8,366	JFE Plastic Resource Corporation	134
JFE Bars & Shapes Corporation	5,362	CHIBA RIVERMENT AND CEMENT CORP.	60
JFE Galvanizing & Coating Co., Ltd.	1,763	JFE Metal Products & Engineering Inc.	53
JFE PRECISION CORPORATION	1,148	JFE Pipe Fitting Mfg. Co., Ltd.	38
Mizushima Ferroalloy Co., Ltd.	266	Total	36,839

NOx Emissions



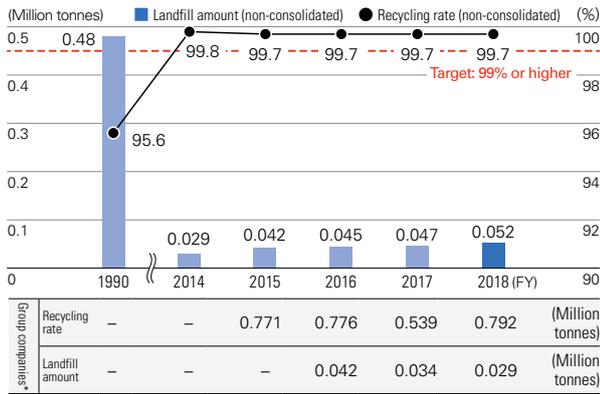
*13 JFE Steel consolidated subsidiaries in Japan.

NOx Emissions of JFE Steel Group Subsidiaries

Name of Company	NOx (Nm³)	Name of Company	NOx (Nm³)
JFE MINERAL COMPANY, LTD.	52,703	MIZUSHIMA RIVERMENT CORP.	1,392
JFE Chemical Corp.	50,265	Galvatex Corporation	1,110
Mizushima Ferroalloy Co., Ltd.	29,838	CHIBA RIVERMENT AND CEMENT CORP.	932
JFE Material Co., Ltd.	25,522	JFE Pipe Fitting Mfg. Co., Ltd.	671
JFE Galvanizing & Coating Co., Ltd.	10,650	JFE Plastic Resource Corporation	540
JFE Bars & Shapes Corporation	9,476	JFE PRECISION CORPORATION	187
JFE Metal Products & Engineering Inc.	2,050	Total	185,335

● Co-product Disposal

Landfill of Co-products and Recycling Rates



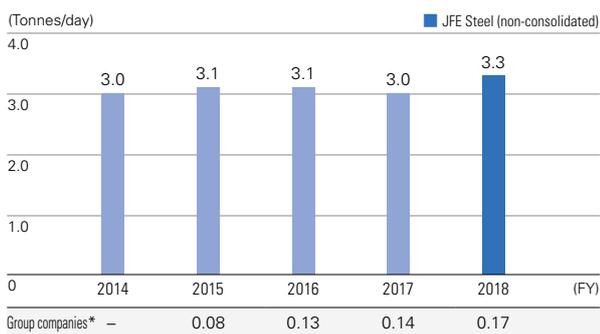
*25 JFE Steel consolidated subsidiaries in Japan.

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	207,806	2,270
JFE MINERAL COMPANY, LTD.	204,736	105
Mizushima Ferroalloy Co., Ltd.	129,518	16,729
JFE Material Co., Ltd.	68,122	4,297
JFE Plastic Resource Corporation	43,349	576
JFE Galvanizing & Coating Co., Ltd.	37,736	25
JFE Kozai Corporation	21,767	7
GECOSS CORPORATION	21,589	418
JFE Welded Pipe Manufacturing Co., Ltd.	16,149	86
JFE ROCKFIBER CORPORATION	11,191	3,095
JFE Container Co., Ltd.	7,532	273
JFE Pipe Fitting Mfg. Co., Ltd.	7,371	0
JFE Metal Products & Engineering Inc.	5,135	39
Galvatec Corporation	4,109	640
JFE LOGISTICS CORPORATION	1,783	280
JFE Techno-wire Corporation	1,116	38
CHIBA RIVERMENT AND CEMENT CORP.	860	1
JFE KENZAI FENCE CO., LTD.	789	31
K-PLASHEET CORPORATION	759	1
JFE Chemical Corp.	168	98
JFE LIFE CORPORATION	83	68
MIZUSHIMA RIVERMENT CORP.	8	0
JFE PRECISION CORPORATION	0	0
JFE Steel Pipe Co., Ltd.	0	146
J-Logitec Co., Ltd.	0	10
Total	791,677	29,234

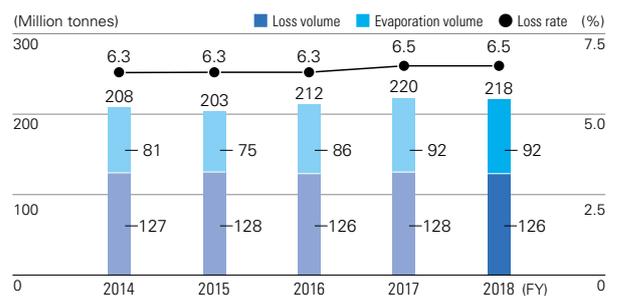
● Discharge into Waterways

Chemical Oxygen Demand (COD)



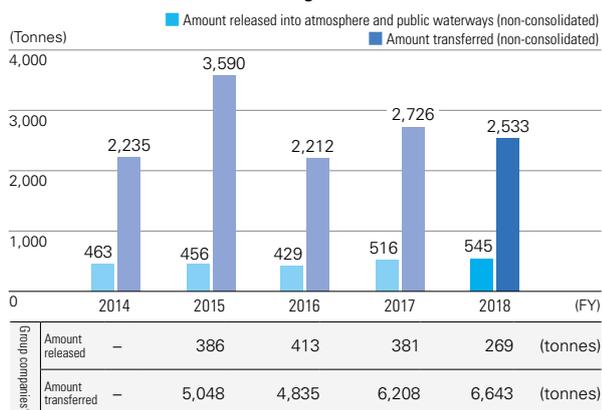
*12 JFE Steel consolidated subsidiaries in Japan.

Wastewater and Evaporation Loss



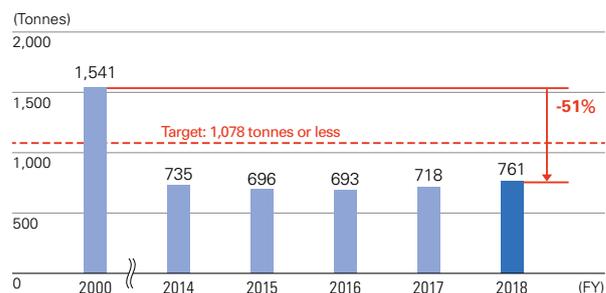
● Management of Chemical Substances

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	12	0	0	0	0
15	Acenaphthene	0.028	0	0	0	0	0
31	Antimony and its compounds	0	0.26	0	0	0	18
33	Asbestos	0	0	0	0	0	1.47
53	Ethylbenzene	67	0	0	0	0	19
80	Xylene	136	0	0	0	0	22
83	Cumene	1.1	0	0	0	0	0
87	Chromium and chromium(III) compounds	0.076	0.45	0	7.2	0	1,116
88	Chromium(VI) compounds	0.0018	0.13	0	0	0	0.541
132	Cobalt and its compounds	0	0	0	0	0	0.002
144	Inorganic cyanide compounds (except complex salts and cyanates)	0	5.6	0	0	0	0
185	Dichloropentafluoropropane; HCFC-225	42	0	0	0	0	0
186	Dichloromethane; methylene dichloride	24	0	0	0	0	0
240	Styrene	10	0	0	0	0	0
242	Selenium and its compounds	0	0.17	0	0	0	1.9
243	Dioxins	4.1	0.000003	0	0	0	0
262	Tetrachloroethylene	25	0	0	0	0	0
272	Copper salts (water-soluble, except complex salts)	0	0.067	0	0	0	0
281	Trichloroethylene	1.1	0	0	0	0	0
296	1,2,4-trimethylbenzene	6.9	0	0	0	0	0.11
297	1,3,5-trimethylbenzene	4.2	0	0	0	0	0
300	Toluene	78	0	0	0	0	1.5
302	Naphthalene	1.2	0	0	0	0	0.19
305	Lead compounds	0	0	0	0	0	300
308	Nickel	0.0029	0	0	0	0	90
309	Nickel compounds	0.0089	2.4	0	0	0	52
321	Vanadium compounds	0	0	0	0	0	18
333	Hydrazine	0	0.19	0	0	0	0
340	Biphenyl	0.009	0	0	0	0	0
353	Diethyl phthalate	0	0	0	0	0	1.4
374	Hydrogen fluoride and its water-soluble salts	0	48	0	0	0	23
384	1-bromopropane	2	0	0	0	0	0
392	N-hexane	0.0059	0	0	0	0	0
400	Benzene	17	0	0	0	0	0
405	Boron compounds	0	20	0	0	0	3.9
406	Polychlorinated biphenyls; PCBs	0	0	0	0	0	11
407	Poly(oxyethylene) alkyl ether (alkyl C = 12 - 15)	0	1.6	0	0	0	0
412	Manganese and its compounds	0.0627	26	0	0	0	630
438	Methylnaphthalene	0.033	0	0	0	0	0
453	Molybdenum and its compounds	0.0015	5.8	0	0	0	224
Subtotal		415.69	121.91	0	7.2	0	2,533.35
Total		545				2,533	

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	0.14	0	0	0	0
15	Acenaphthene	0.028	0	0	0	0	0
53	Ethylbenzene	0.29	0	0	0	0	0
80	Xylene	0.62	0	0	0	0	0
87	Chromium and chromium(III) compounds	0	0.3	0	0	0	1,000
88	Chromium(VI) compounds	0	0.13	0	0	0	0.0011
185	Dichloropentafluoropropane; HCFC-225	42	0	0	0	0	0
243	Dioxins	0.031	0	0	0	0	0
272	Copper salts (water-soluble, except complex salts)	0	0.067	0	0	0	0
300	Toluene	2	0	0	0	0	0
302	Naphthalene	0.18	0	0	0	0	0
308	Nickel	0	0	0	0	0	90
309	Nickel compounds	0.002	1.8	0	0	0	18
333	Hydrazine	0	0.19	0	0	0	0
340	Biphenyl	0.009	0	0	0	0	0
374	Hydrogen fluoride and its water-soluble salts	0	39	0	0	0	23
400	Benzene	2.1	0	0	0	0	0
405	Boron compounds	0	6.1	0	0	0	0
406	Polychlorinated biphenyls; PCBs	0	0	0	0	0	4.8
412	Manganese and its compounds	0.0077	0.74	0	0	0	93
438	Methylnaphthalene	0.033	0	0	0	0	0
453	Molybdenum and its compounds	0	2.8	0	0	0	3.5
Subtotal		47.27	51.45	0	0	0	1,232.3
Total		99				1,232.3	

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	0	0	0	0	1
80	Xylene	5	0	0	0	0	1.6
87	Chromium and chromium(III) compounds	0.022	0	0	0	0	54
88	Chromium(VI) compounds	0.0018	0	0	0	0	0
240	Styrene	0.12	0	0	0	0	0
243	Dioxins	1.6	0	0	0	0	0
300	Toluene	16	0	0	0	0	1.4
302	Naphthalene	0.067	0	0	0	0	0
309	Nickel compounds	0.0022	0	0	0	0	2.9
353	Diethyl phthalate	0	0	0	0	0	1.4
400	Benzene	5.1	0	0	0	0	0
405	Boron compounds	0	2.5	0	0	0	0
406	Polychlorinated biphenyls; PCBs	0	0	0	0	0	6.6
412	Manganese and its compounds	0.011	1.1	0	0	0	210
453	Molybdenum and its compounds	0.0014	1.7	0	0	0	220
Subtotal		28.33	5.3	0	0	0	498.9
Total		34				498.9	

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	9.3	0	0	0	0
31	Antimony and its compounds	0	0.14	0	0	0	0
33	Asbestos	0	0	0	0	0	0.54
53	Ethylbenzene	4	0	0	0	0	0
80	Xylene	6.2	0	0	0	0	0
87	Chromium and chromium(III) compounds	0.0099	0	0	0	0	22
88	Chromium(VI) compounds	0	0	0	0	0	0.54
144	Inorganic cyanide compounds (except complex salts and cyanates)	0	5.6	0	0	0	0
186	Dichloromethane; methylene dichloride	9.9	0	0	0	0	0
242	Selenium and its compounds	0	0.17	0	0	0	1.9
243	Dioxins	0.34	0	0	0	0	0
262	Tetrachloroethylene	1.8	0	0	0	0	0
296	1,2,4-trimethylbenzene	1.9	0	0	0	0	0
300	Toluene	27	0	0	0	0	0
309	Nickel compounds	0.005	0	0	0	0	3.2
400	Benzene	2.4	0	0	0	0	0
405	Boron compounds	0	9.1	0	0	0	1.7
407	Poly(oxyethylene) alkyl ether (alkyl C=12-15)	0	1.6	0	0	0	0
412	Manganese and its compounds	0.023	19	0	0	0	100
453	Molybdenum and its compounds	0	0.82	0	0	0	0
Subtotal		53.24	45.73	0	0	0	129.88
Total		99				129.88	

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	1.7	0	0	0	0	0
Subtotal		1.7	0	0	0	0	0
Total		1.7				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	2.2	0	0	0	0
31	Antimony and its compounds	0	0.12	0	0	0	18
33	Asbestos	0	0	0	0	0	0.93
53	Ethylbenzene	30	0	0	0	0	18
80	Xylene	89	0	0	0	0	20
87	Chromium and chromium(III) compounds	0.041	0	0	0	0	28
132	Cobalt and its compounds	0	0	0	0	0	0.002
186	Dichloromethane; methylene dichloride	14	0	0	0	0	0
240	Styrene	1.2	0	0	0	0	0
243	Dioxins	1.4	0	0	0	0	0
262	Tetrachloroethylene	23	0	0	0	0	0
281	Trichloroethylene	1.1	0	0	0	0	0
296	1,2,4-trimethylbenzene	3.6	0	0	0	0	0.11
300	Toluene	24	0	0	0	0	0.058
302	Naphthalene	0.98	0	0	0	0	0.19
305	Lead compounds	0	0	0	0	0	180
308	Nickel	0.0029	0	0	0	0	0
309	Nickel compounds	0	0.55	0	0	0	25
321	Vanadium compounds	0	0	0	0	0	18
374	Hydrogen fluoride and its water-soluble salts	0	8.8	0	0	0	0
400	Benzene	7.4	0	0	0	0	0
405	Boron compounds	0	1.5	0	0	0	1.8
412	Manganese and its compounds	0.021	4.8	0	0	0	140
453	Molybdenum and its compounds	0.0001	0.22	0	0	0	0
Subtotal		194.35	18.19	0	0	0	450.09
Total		213				450.09	

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	0.041	0	0	0	0
53	Ethylbenzene	31	0	0	0	0	0
80	Xylene	35	0	0	0	0	0
83	Cumene	1.1	0	0	0	0	0
87	Chromium and chromium(III) compounds	0	0.15	0	0	0	0.2
240	Styrene	8.8	0	0	0	0	0
296	1,2,4-trimethylbenzene	1.4	0	0	0	0	0
297	1,3,5-trimethylbenzene	4.2	0	0	0	0	0
300	Toluene	7.3	0	0	0	0	0
309	Nickel compounds	0	0.036	0	0	0	2.5
384	1-bromopropane	2	0	0	0	0	0
392	N-hexane	0.0059	0	0	0	0	0
405	Boron compounds	0	0.79	0	0	0	0
412	Manganese and its compounds	0	0.17	0	0	0	12
453	Molybdenum and its compounds	0	0.24	0	0	0	0.078
Subtotal		90.81	1.43	0	0	0	14.78
Total		92				14.78	

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
87	Chromium and chromium(III) compounds	0	0	0	7.2	0	12
243	Dioxins	0.71	0	0	0	0	0
305	Lead compounds	0	0	0	0	0	120
412	Manganese and its compounds	0	0	0	0	0	75
Subtotal		0	0	0	7.2	0	207
Total		7.2				207	

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	0.89	0	0	0	0	0
349	Phenol	6.5	0	0	0	0	0
411	Formaldehyde	3.7	0	0	0	0	0
Subtotal		11	0	0	0	0	0
Total		11				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	3.7
405	Boron compounds	0.008	0	0	0	0	3.2
412	Manganese and its compounds	5.7	0	0	0	0	3,600
Subtotal		5.71	0	0	0	0	3,607
Total		6				3,607	

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	0.028	0	0	0	0
87	Chromium and chromium(III) compounds	0.26	0.042	0	0	0	170
88	Chromium(VI) compounds	0	0.021	0	0	0	0
242	Selenium and its compounds	0	0.1	0	0	0	0
243	Dioxins	0.000034	0.000002	0	0	0	0.00027
305	Lead compounds	0	0.006	0	0	0	0
309	Nickel compounds	0.001	0.028	0	0	0	6.9
321	Vanadium compounds	0.004	0.44	0	0	0	17
374	Hydrogen fluoride and its water-soluble salts	0	0.95	0	0	0	0
405	Boron compounds	0	0.54	0	0	0	0
412	Manganese and its compounds	0	0.67	0	0	0	0
453	Molybdenum and its compounds	0.001	1.7	0	0	0	3.5
Subtotal		0.266	4.53	0	0	0	197
Total		5				197	

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
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.0015
186	Dichloromethane; methylene dichloride	0	0	0	0	0	0.003
308	Nickel	5	0	0	0	0	0.98
453	Molybdenum and its compounds	0	0	0	0	0	0.004
Subtotal		5	0	0	0	0	0.989
Total		5				0.989	

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

JFE Group

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
87	Chromium and chromium(III) compounds	0	0	0	0	0	48
243	Dioxins	2.332	0	0	0	0	0
305	Lead compounds	0	0	0	0	0	259
412	Manganese and its compounds	0	0.01	0	0	0	1,649
Subtotal		0	0.01	0	0	0	1,956
Total		0.01				1,956	

The total does not include dioxins.

JFE Steel

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	9.5	0	0	0	0	0
80	Xylene	31.5	0	0	0	0	0
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.66
132	Cobalt and its compounds	0	0	0	0	0	0.15
272	Copper salts (water-soluble, except complex salts)	0	0	0	0	0	0.25
296	1,2,4-trimethylbenzene	9.4	0	0	0	0	0
309	Nickel compounds	0	0	0	0	0	0.36
374	Hydrogen fluoride and its water-soluble salts	0	0	0	0	0	0.5
405	Boron compounds	0	0	0	0	0	4.8
412	Manganese and its compounds	0	0	0	0	0	0.22
Subtotal		50	0	0	0	0	6.94
Total		50				6.94	

JFE Engineering

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	0.97
291	1,3,5-tris(2,3-epoxypropyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	0	0	0	0	0	0.63
Subtotal		0	0	0	0	0	1.6
Total		0				1.6	

JFE Shoji Trade

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	2.1	0	0	0	0	4.8
80	Xylene	4.14	0	0	0	0	26
83	Cumene	0.003	0	0	0	0	0.017
87	Chromium and chromium(III) compounds	0	0	0	0	0	0.57
88	Chromium(VI) compounds	0	0.0037	0	0	0	1.6
296	1,2,4-trimethylbenzene	0.5	0	0	0	0	2.3
297	1,3,5-trimethylbenzene	0.4	0	0	0	0	1.3
300	Toluene	0.2	0	0	0	0	31
302	Naphthalene	0.1	0	0	0	0	0.2
305	Lead compounds	0	0	0	0	0	0.06
309	Nickel compounds	0.017	0	0	0	0	0.033
354	Di-n-butyl phthalate	0.03	0	0	0	0	0.14
411	Formaldehyde	0.03	0	0	0	0	0.15
Subtotal		7.41	0.0037	0	0	0	68
Total		7.42				68	

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	0.014	0	0	0	0.292
53	Ethylbenzene	41	0	0	0	0	9
80	Xylene	82	0	0	0	0	20
296	1,2,4-trimethylbenzene	20.8	0	0	0	0	3.85
297	1,3,5-trimethylbenzene	4.1	0	0	0	0	0.74
300	Toluene	15.6	0	0	0	0	19
411	Formaldehyde	1.5	0	0	0	0	0.7
Subtotal		164	0.014	0	0	0	54
Total		165				54	

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
262	Tetrachloroethylene	1.3	0	0	0	0	0
Subtotal		1.3	0	0	0	0	0
Total		1.3				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)	0.13	0.018	0	0	0	89
75	Cadmium and its compounds	0.0004	0.0001	0	0	0	0.025
305	Lead compounds	0.028	0.0001	0	0	0	0.4
Subtotal		0.158	0.0182	0	0	0	89
Total		0.177				89	

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	8	0	0	0	0	0
Subtotal		8	0	0	0	0	0
Total		8				0	

JFE Group

JFE Steel

JFE Engineering

JFE Shoji Trade

JFE Group

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	0.15
Subtotal		0	0	0	0	0	0.15
Total		0				0.15	

JFE Steel

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
80	Xylene	0.13	0	0	0	0	3
412	Manganese and its compounds	0.19	0	0	0	0	622
Subtotal		0.32	0	0	0	0	625
Total		0.32				625	

JFE Engineering

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	0.008	0	0	0	0	0
53	Ethylbenzene	0.497	0	0	0	0	0
80	Xylene	1.17	0	0	0	0	0
81	Quinoline	0.005	0	0	0	0	0
86	Cresol	0.116	0	0	0	0	0
190	Dicyclopentadiene	0.022	0	0	0	0	0
240	Styrene	0.521	0	0	0	0	0
296	1,2,4-trimethylbenzene	0.044	0	0	0	0	0
300	Toluene	1.56	0	0	0	0	0
302	Naphthalene	1.12	0	0	0	0	0
321	Vanadium compounds	0	0	0	0	0	1.12
340	Biphenyl	0.023	0	0	0	0	0
349	Phenol	0.141	0	0	0	0	0
400	Benzene	4.47	0	0	0	0	0.011
438	Methylnaphthalene	0.057	0	0	0	0	0
453	Molybdenum and its compounds	0	0	0	0	0	0.71
Subtotal		9.75	0	0	0	0	1.84
Total		9.75				1.84	

JFE Shoji Trade

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
80	Xylene	0.00001	0	0	0	0	0
300	Toluene	0.042	0	0	0	0	0
308	Nickel	0	0	0	0	0	33
309	Nickel compounds	0	0	0	0	0	0.17
438	Methylnaphthalene	0.0082	0	0	0	0	0
Subtotal		0.0502	0	0	0	0	33
Total		0.0502				33	

Substances Reported under PRTR (K-PLASHEET CORPORATION)

(Tonnes/year)

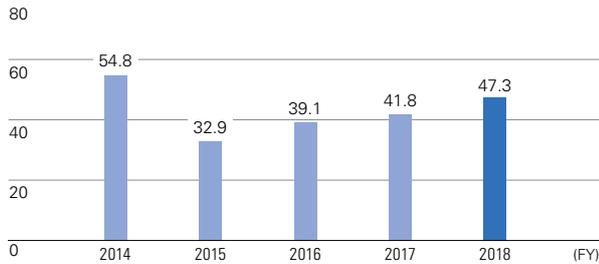
Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
30	n-alkylbenzenesulfonic acid and its salts	0	0.1	0	0	0	0
Subtotal		0	0.1	0	0	0	0
Total		0.1				0	

JFE Engineering

Input Materials

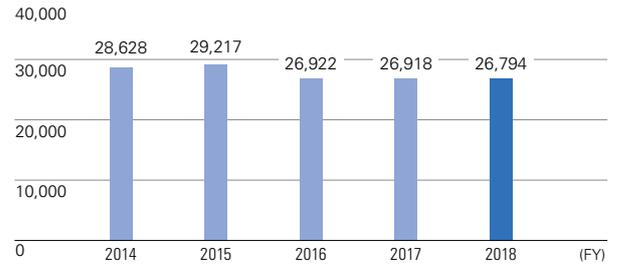
Raw Materials

(Thousand tonnes)



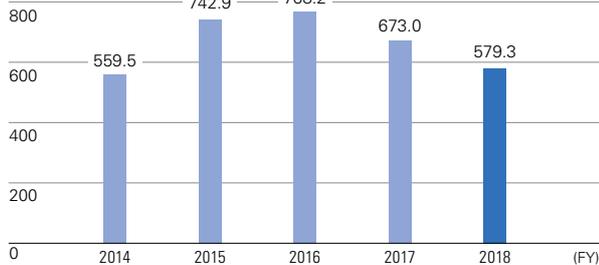
Electricity

(MWh)



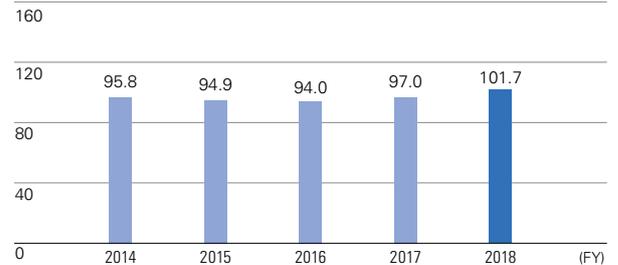
Heavy Oil, Kerosene, Light Oil and Gasoline

(kl)



Water

(Thousand tonnes)



Water Used by JFE Engineering Group Subsidiaries (FY2018)

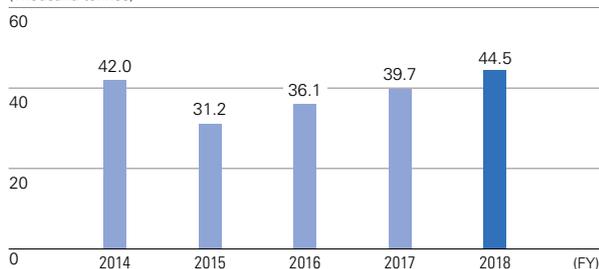
(t)

Name of Company	CO ₂ Emissions
J&T Recycling Corporation	733,862
J Farm Corporation	24,028
Tohoku Dock Ironworks Corporation	58
Fujikako, Inc.	28
JFE Environmental Service Corporation	26
NORTHERN JAPAN MACHINERY Corporation	6
JFE Aqua Machine and Service Corporation	1
Total	758,009

Output Products

Products

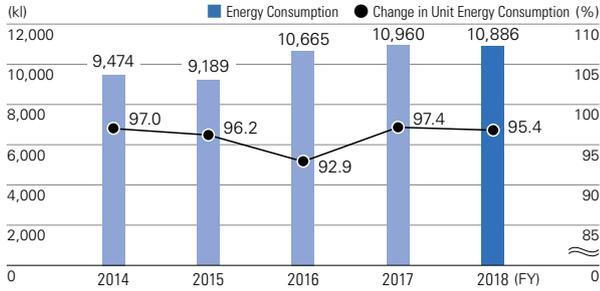
(Thousand tonnes)



CO₂ Emissions and Energy Consumption

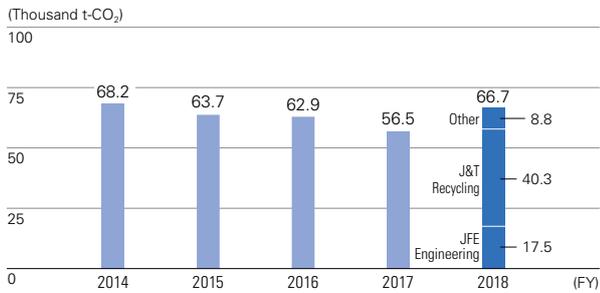
● Status on Non-consolidated Basis

Energy Consumption and Change in Unit Energy Consumption



● Status as a Group

JFE Engineering's CO₂ Emissions from Energy Sources



Data cover CO₂ emission from Energy Sources by JFE Engineering and 10 domestic subsidiaries.

JFE Engineering Group's CO₂ Emissions from Energy Sources (FY2018)

Name of Company	CO ₂ Emissions (t-CO ₂)
JFE Engineering Corporation	17,525
J&T Recycling Corporation	40,311
J Farm Corporation	2,499
Fujikako, Inc.	2,208
NORTHERN JAPAN MACHINERY Corporation	1,140
Tohoku Dock Ironworks Corporation	959
JFE Environmental Service Corporation	797
Asuka Soken Co., Ltd.	721
JFE Pipeline Engineering Corporation	320
JFE Technos Corporation	167
JFE Aqua Machine and Service Corporation	4
Total	66,650

Energy Consumption of JFE Engineering Group Subsidiaries (FY2018)

Name of Company	Energy Consumption (GJ)
JFE Engineering Corporation	421,923
J&T Recycling Corporation	745,524
J Farm Corporation	46,055
Fujikako, Inc.	44,401
NORTHERN JAPAN MACHINERY Corporation	19,280
Tohoku Dock Ironworks Corporation	17,836
Asuka Soken Co., Ltd.	12,216
JFE Environmental Service Corporation	11,727
JFE Pipeline Engineering Corporation	4,920
JFE Technos Corporation	2,815
JFE Aqua Machine and Service Corporation	75
Total	1,326,772

JFE Group

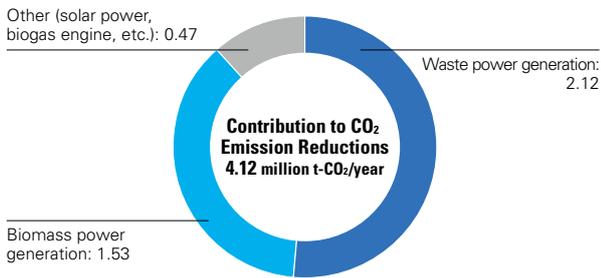
JFE Steel

JFE Engineering

JFE Shoji Trade

Technologies to Reduce Environmental Load

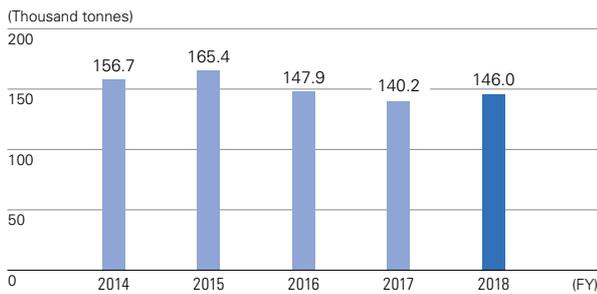
Contribution to CO₂ Emission Reductions by Renewable Energy Plants



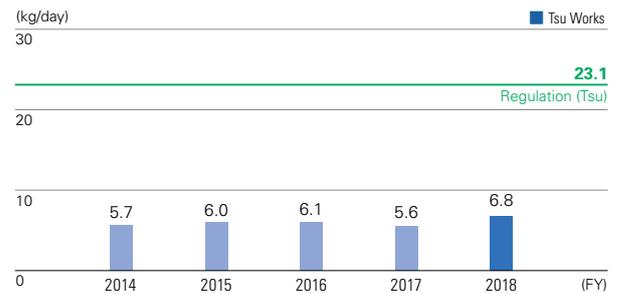
Disposed Substances

● Release into Water Area

Wastewater

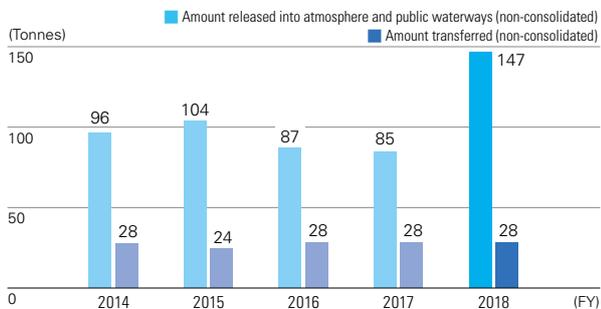


Chemical Oxygen Demand (COD) in Wastewater Released Publicly



Management of Chemical Substances

Release and Transfer of PRTR-Registered Substances



Group companies*	Amount released	Amount transferred
—	58.4 (tonnes)	5.7 (tonnes)

*4 JFE Engineering consolidated subsidiaries in Japan.

Substances Reported under PRTR (all Companies)

(Tonnes/year)

JFE Group

JFE Steel

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	32	0	0	0	0	1.7
80	Xylene	59.4	0	0	0	0	3.1
87	Chromium and chromium(III) compounds	0	0	0	0	0	1.4
240	Styrene	1.1	0	0	0	0	0.1
296	1,2,4-trimethylbenzene	4.6	0	0	0	0	0.2
297	1,3,5-trimethylbenzene	0.6	0	0	0	0	0
300	Toluene	49.2	0	0	0	0	3.9
309	Nickel compounds	0	0	0	0	0	3.3
355	Bis (2-ethylhexyl) phthalate	0	0	0	0	0	0.1
412	Manganese and its compounds	0	0	0	0	0	13.3
448	Methylenebis(4,1-phenylene) diisocyanate	0	0	0	0	0	0.5
Total		146.9	0	0	0	0	27.7
		146.9				27.7	
		174.6					

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

(Tonnes/year)

JFE Engineering

JFE Shoji Trade

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	0.01	0	0	0	0	0
240	Styrene	1.1	0	0	0	0	0.13
300	Toluene	20	0	0	0	0	2.4
355	Bis (2-ethylhexyl) phthalate	0	0	0	0	0	0.13
412	Manganese and its compounds	0	0	0	0	0	0.66
448	Methylenebis(4,1-phenylene) diisocyanate	0	0	0	0	0	0.45
Total		21.1	0	0	0	0	3.8
		21.1				3.8	
		24.9					

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	32	0	0	0	0	1.7
80	Xylene	59.4	0	0	0	0	3.1
87	Chromium and chromium(III) compounds	0	0	0	0	0	1.4
296	1,2,4-trimethylbenzene	4.6	0	0	0	0	0.24
297	1,3,5-trimethylbenzene	0.63	0	0	0	0	0.033
300	Toluene	29.2	0	0	0	0	1.5
309	Nickel compounds	0	0	0	0	0	3.3
412	Manganese and its compounds	0	0	0	0	0	12.6
Total		125.8	0	0	0	0	23.9
		125.8				23.9	
		149.7					

● All Substances Reported under PRTR by Group Companies

Substances Reported under PRTR (J&T Recycling 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
243	Dioxins	0.00115	0	0	0	0	3.7
Subtotal		0	0	0	0	0	0
Total		0				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	19.1	0	0	0	0	0.75
265	Tetrahydromethylphthalic anhydride	0	0	0	0	0	0.034
415	Methacrylic acid	0.23	0	0	0	0	0.0048
Subtotal		19.3	0	0	0	0	0.8
Total		19.3				0.8	

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	8.9	0	0	0	0	1.6
80	Xylene	14.5	0	0	0	0	2.6
87	Chromium and chromium(III) compounds	0.0021	0	0	0	0	0.051
300	Toluene	3.4	0	0	0	0	0.6
309	Nickel compounds	0.00048	0	0	0	0	0.0043
412	Manganese and its compounds	0.0061	0	0	0	0	0.046
Subtotal		26.8	0	0	0	0	4.9
Total		26.8				4.9	

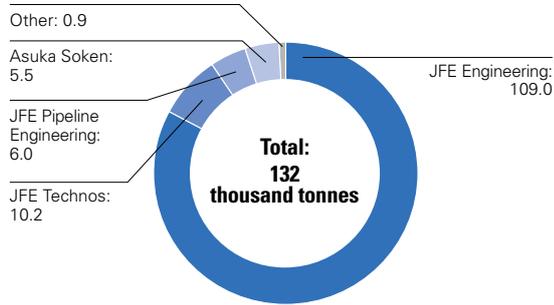
Substances Reported under PRTR (NORTHERN JAPAN MACHINERY Corporation)

(Tonnes/year)

Substance No.	Substance	Volume Released				Volume Transferred	
		Air	Water Area	Soil	On-premise Landfill	Sewer	Off-premise
53	Ethylbenzene	5.3	0	0	0	0	0
80	Xylene	5.9	0	0	0	0	0
300	Toluene	1.1	0	0	0	0	0
Subtotal		12.3	0	0	0	0	0
Total		12.3				0	

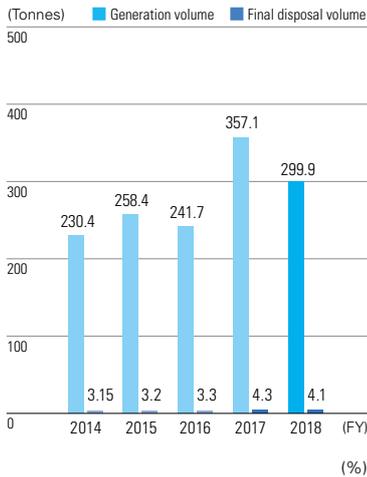
Waste Disposal in Each Section and Works

JFE Engineering Group Waste Disposal



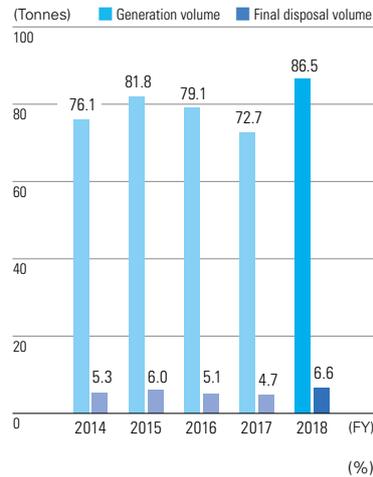
Offices

Yokohama Head Office



	2014	2015	2016	2017	2018
Recycling rate (targets)	98.0	98.0	98.0	98.0	98.0
Recycling rate (results)	98.5	98.7	98.5	98.7	98.5

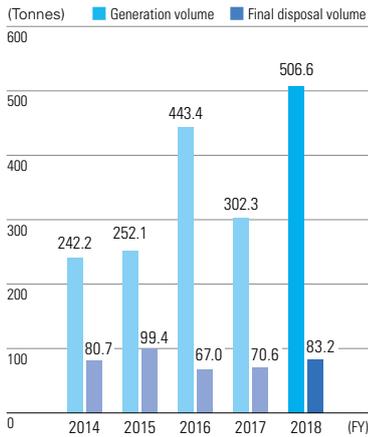
Tsu Works



	2014	2015	2016	2017	2018
Recycling rate (targets)	92.0	92.0	92.0	92.0	90.0
Recycling rate (results)	87.4	91.5	88.9	89.0	85.2

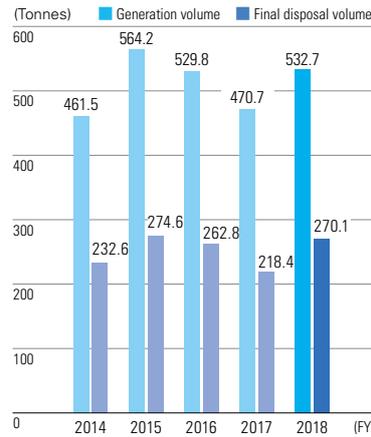
Plants

Tsurumi Works



(%)	2014	2015	2016	2017	2018
Recycling rate (targets)	58.0	58.0	58.0	55.0	58.0
Recycling rate (results)	57.5	49.8	78.9	61.0	68.7

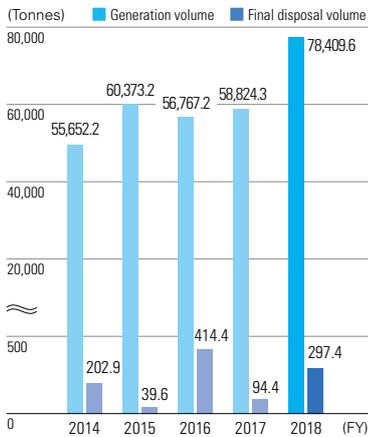
Tsu Works



(%)	2014	2015	2016	2017	2018
Recycling rate (targets)	30.0	31.0	31.0	31.0	31.0
Recycling rate (results)	33.9	34.0	32.5	37.0	32.1

Construction Sites

Rubble



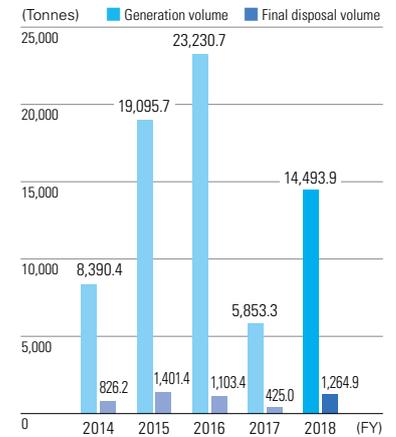
(%)	2014	2015	2016	2017	2018
Recycling rate (targets)	99.5	99.5	99.5	99.5	99.5
Recycling rate (results)	99.6	99.9	99.3	99.8	99.6

Sludge



(%)	2014	2015	2016	2017	2018
Recycling rate (targets)	95.0	95.0	95.0	95.0	95.0
Recycling rate (results)	99.95	99.5	99.5	96.3	98.8

Industrial Wastes, Excluding Rubble and Sludge



(%)	2014	2015	2016	2017	2018
Recycling rate (targets)	85.0	85.0	85.0	85.0	85.0
Recycling rate (results)	93.3	91.7	95.0	92.2	91.0

JFE Shoji Trade

JFE Group

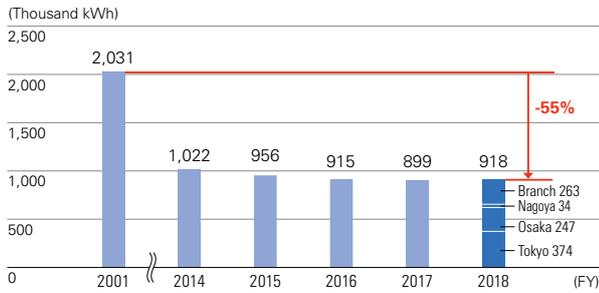
JFE Steel

JFE Engineering

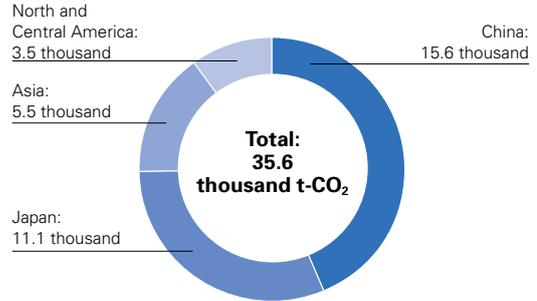
JFE Shoji Trade

Electricity Consumption and CO₂ Emissions

Electric Power Consumption of JFE Shoji Trade



CO₂ Emissions of the JFE Shoji Trade Group

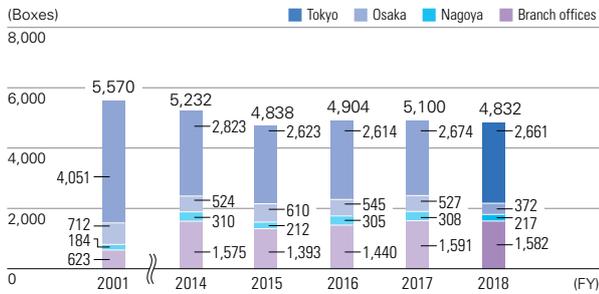


The graph shows CO₂ emissions from electric power consumption by JFE Shoji Trade and 33 domestic and overseas consolidated subsidiaries (steel-processing companies).

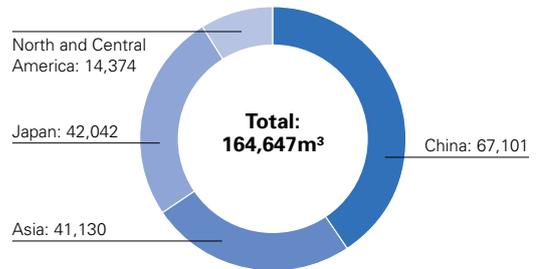
CO₂ Emission Factor for Purchased Energy
 Japan: unadjusted emission factors of each electric power company
 Overseas: based on each country's GHG protocol

Input Materials

Paper Used (Copier Papers)



Water Use of the JFE Shoji Trade Group (m³)



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

Independent Assurance Statement



Independent Assurance Statement

September 25, 2019

Mr. Koji Kakigi
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 2018 reported in JFE Group CSR REPORT 2019, which indicate 52.1 million tons of CO₂ for Scope1, 7.5 million tons of CO₂ for Scope2 and 16.7 million tons of CO₂ for Scope3, and 240 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 2018

(Ministry of the Environment, Japan)

Chapter 1: Basic Information of Environmental Reporting						
Items	Descriptions in the CSR Report					Environmental Data Book Pages
	Pages	Contents	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Basic requirements for environmental reporting						
(1) Boundary	1	Editorial Policy	○	○	○	1
(2) Reporting period	1	Editorial Policy	○	○	○	1
(3) Reporting standards and guidelines	1	Editorial Policy	○	○	○	—
	Web	GRI Standard Index	○	○	○	—
(4) Overview of the environmental report	1	Editorial Policy	○	○	○	—
	Back cover		○	○	○	—
2. Trends in key performance indicators						
(1) Trends in major performance indicators	15–18	Material CSR Issues of the JFE Group	○	○	○	—

Chapter 2: Items to Be Included in Environmental Reporting						
Items	Descriptions in the CSR Report					Environmental Data Book Pages
	Pages	Contents	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Top Management Commitments						
(1) Top management commitments to the JFE Group's response to material environmental issues	3–4	Message from the CEO	○	○	○	—
2. Governance						
(1) JFE Group governance structure	19–21	CSR Management	○	○	○	—
(2) Manager responsible for material environmental issues	33–34	Environmental Management	○	○	○	—
(3) Roles of the board of directors and board of executive officers in the management of material environmental issues	33	Environmental Management	○	○	○	—
3. Stakeholder Engagement						
(1) Corporate policies to stakeholders	33	Environmental Management	○	○	○	—
(2) Overview of stakeholder engagement activities conducted in the reporting period	7–10	JFE Group Value Chain	○	○	○	—
	57	Environmental Communication	○	○	○	—
	75	Stakeholder Engagement	○	○	○	—
4. Risk Management						
(1) Environment-related risk identification, assessment, and management processes	21	CSR Management	○	○	○	—
	27–32	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
(2) Positioning of the above processes in the JFE Group's overall risk management	21	CSR Management	○	○	○	—
5. Business Model						
(1) JFE Group business model	5–6	Businesses to Ensure Sustainable Societies	○	○	○	—
	7–10	JFE Group Value Chain	○	○	○	—
6. Value Chain Management						
(1) Value chain overview	7–10	JFE Group Value Chain	○	○	○	—
(2) Green procurement policy, objectives, and results	35	Environmental Management	○	○	○	—
	62	Suppliers	○	○	○	—
(3) Status of eco-friendly products and services	45–47	Climate Change Mitigation	○	○	○	—
	50	Protect global atmosphere and water	○	○	○	—
	52	Initiatives to Preserve Biodiversity	○	○	○	—
	54–56	Resource Recycling	○	○	○	5–6
7. Long-term Vision						
(1) Long-term vision	3–4	Message from the CEO	○	○	○	—
	25–32	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
	41	Climate Change Mitigation	○	○	○	—
(2) Time period covered by the long-term vision	3–4	Message from the CEO	○	○	○	—
	25–26, 28	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
	41	Climate Change Mitigation	○	○	○	—
(3) Reasons why that time period was selected	28	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
	41	Climate Change Mitigation	○	○	○	—
8. Strategy						
(1) JFE Group business strategy for contributing to the achievement of a sustainable society	3–4	Message from the CEO	○	○	○	—
	5–6	Businesses to Ensure Sustainable Societies	○	○	○	—
	13–18	Material CSR Issues of the JFE Group	○	○	○	—
	25–32	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
	41	Climate Change Mitigation	○	○	○	—
9. Methodology for Identifying Material Environmental Issues						
(1) Procedure by which the JFE Group identified its material environmental issues	13–14	Material CSR Issues of the JFE Group	○	○	○	—
	28	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
(2) List of identified material environmental issues	15–18	Material CSR Issues of the JFE Group	○	○	○	—
	29	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
(3) Reasons that the identified environmental issues were judged material	13–14	Material CSR Issues of the JFE Group	○	○	○	—
	27–32	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—
(4) Boundaries of the material environmental issues	7–10	JFE Group Value Chain	○	○	○	—
	13–14	Material CSR Issues of the JFE Group	○	○	○	—
	28	Special Feature: JFE's Initiatives on Climate Change	○	○	○	—

10. JFE Group Material Environmental Issues						
(1) Policies and/or action plans	2	JFE Group's CSR	○	○	○	—
	7–10	JFE Group Value Chain	○	○	○	—
	15–18	Material CSR Issues of the JFE Group	○	○	○	—
	25–26, 30–32	Special Feature: JFE's Initiatives on Climate Change	○	○		—
(2) Targets and results of policies/action plans based on performance indicators	15–18	Material CSR Issues of the JFE Group	○	○	○	—
	23	CSR Management	○	○	○	—
(3) Methodologies used for calculating each performance indicator	13–14	Material CSR Issues of the JFE Group	○	○	○	—
(4) Aggregation scope of data for each performance indicator	1	Editorial Policy	○	○	○	—
	13–18	Material CSR Issues of the JFE Group	○	○	○	—
(5) Financial impact of risks and opportunities, and calculation methodologies if the financial impact is significant	35–36	Environmental Management	○	○	○	3
(6) Assurance report by an independent third party	78	Independent Assurance Statement	○	○	○	30

Reference: Major Environmental Issues and Their Performance Indicators						
Items	Descriptions in the CSR Report					Environmental Data Book Pages
	Pages	Contents	JFE Steel	JFE Engineering	JFE Shoji Trade	
1. Climate Change						
Greenhouse Gas Emissions						
(1) Scope 1 emissions	37–38	Material Flow	○	○		7–8
	39–40, 44	Climate Change Mitigation	○	○		4, 10–11, 23
(2) Scope 2 emissions	37–38	Material Flow	○	○		7–8
	39–40, 44	Climate Change Mitigation	○	○	○	4, 10–11, 23, 29
(3) Scope 3 emissions	37–38	Material Flow	○			7–8
	39	Climate Change Mitigation	○	○	○	4
Emission Intensity						
(1) Greenhouse gas emission intensity	40, 45	Climate Change Mitigation	○			11
Energy Usage						
(1) Breakdown of energy usage and overall energy usage	37–38	Material Flow	○			7–8
	40, 44	Climate Change Mitigation	○	Environmental Data Book	○	11, 23, 29
(2) Renewable energy usage as a percentage of overall energy usage	—					—
2. Water Resources						
(1) Water resource inputs	37–38	Material Flow	○	○		7–8
	53	Resource Recycling	○	○	Environmental Data Book	9, 22, 29
(2) Water intensity	—					—
(3) Water discharge	37–38	Material Flow	○	○		7–8
	—		Environmental Data Book	Environmental Data Book		13, 24
(4) Status of water stress	53	Resource Recycling	○			—
3. Biodiversity						
(1) Impact of business activities on biodiversity	51	Initiatives to Preserve Biodiversity	○	○	○	—
(2) Status and extent of the dependency of the JFE Group's business activities on biodiversity	51	Initiatives to Preserve Biodiversity	○			—
(3) Business activities that contribute to biodiversity conservation	51–52	Initiatives to Preserve Biodiversity	○	○		—
(4) Status of cooperation with external stakeholders	52	Initiatives to Preserve Biodiversity	○	○	○	—
4. Resource Circulation						
Resource Inputs						
(1) Volume of nonrenewable resource inputs	37–38	Material Flow	○			7–8
	—		Environmental Data Book	Environmental Data Book		9, 22
(2) Volume of renewable resource inputs	37–38	Material Flow	○			7–8
	—				Environmental Data Book	29
(3) Volume of recycled materials used	37–38	Material Flow	○			7–8
(4) Rate of recycled and reused resources (= volume of recycled materials used/ volume of resource inputs)	37–38	Material Flow	○	○		7–8
	54	Resource Recycling	○	○		9–10, 27–28
Resource Waste						
(1) Total production of waste	37–38	Material Flow	○			7–8
	54	Resource Recycling		○		13, 27–28
(2) Total final disposal volume of waste	37–38	Material Flow	○	○		7–8
	54	Resource Recycling	○	○		13, 27–28
5. Chemical Substances						
(1) Volume of chemical substances in storage	—					—
(2) Volume of chemical substance emissions	37–38	Material Flow	○			7–8
	49	Protect the global atmosphere and water	○	○		14–21, 24–26
(3) Volume of chemical substances transferred	37–38	Material Flow	○			7–8
	49	Protect the global atmosphere and water	○	○		14–21, 24–26
(4) Volume of chemical substances handled (volume used)	—					—



JFE

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