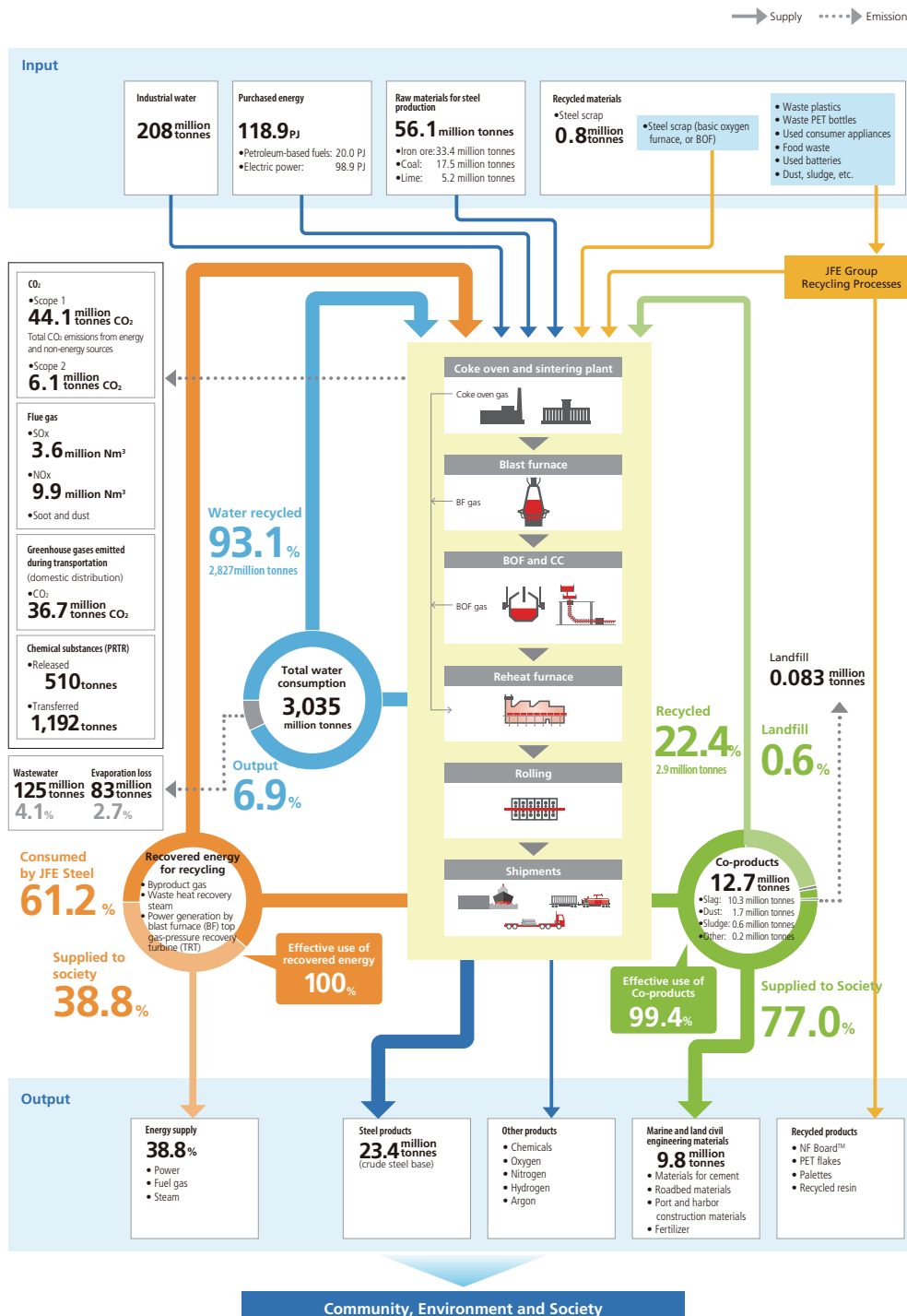


Environmental Data

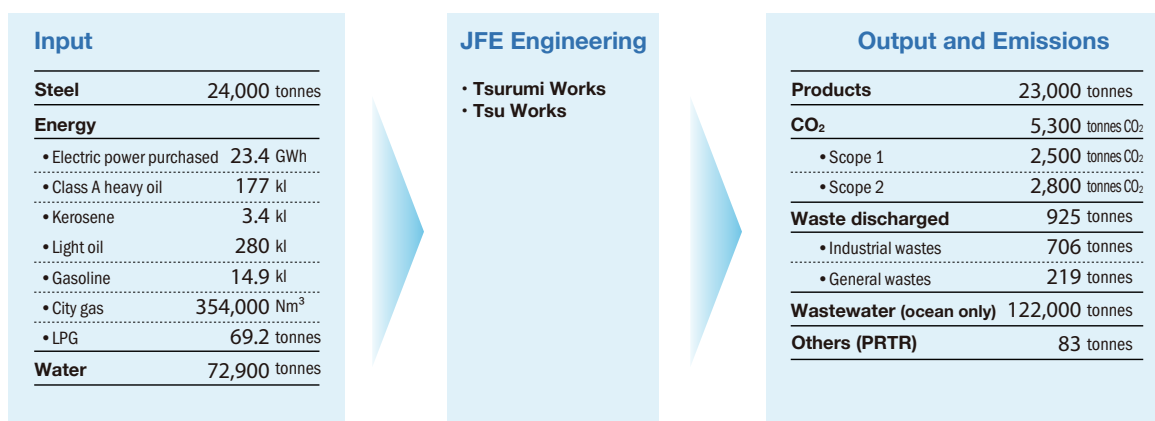
Material Flow

JFE Steel works to reduce the environmental impact of its iron and steelmaking processes, including through the effective use of resources. The company recycles 93.1% of the water it uses for production and uses 99.4% of its co-products, such as iron and steelmaking 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 Steel's Material Flow (Non-Consolidated)



JFE Engineering's Material Flow (Head Office and Works)



Abbreviations indicated under "scope" represent the following group or company:
 JFE Group [All]; JFE Steel Group [ST Gr]; JFE Steel [ST]; JFE Engineering Group [EN Gr];
 JFE Engineering [EN]; JFE Shoji Group [SH Gr]; JFE Shoji [SH]

Environmental Indicators

Area	Operating company	Target	FY2023 results and related pages
Greenhouse Gas and Energy	ST	<ul style="list-style-type: none"> Reduce CO₂ emissions by 18% from FY2013 levels by the end of FY2024 	PP.237-238
	EN	<ul style="list-style-type: none"> Reduce CO₂ emissions in its own plants and offices FY2024: 40% reduction from FY2013 levels Contribute to reduction in CO₂ emissions (FY2023): 11.5 million tons per year 	PP.237-238,240
	SH	<ul style="list-style-type: none"> Reduce CO₂ emissions through the procurement of electricity derived from renewable energy FY2022 domestic CO₂ emissions: Reduce by 10% from FY2019 levels (reduce by 5% per year from FY2019 levels from FY2021 to FY2024) 	P.237-238
Chemical Substances	ST	<ul style="list-style-type: none"> VOC emissions: -30% from FY2000 (1,078 t or less) Benzene emissions: -80% from FY1999 (46 t or less) Dichloromethane emissions: -40% from FY1999 (46 t or less) 	P.244
Resource Use	ST	<ul style="list-style-type: none"> Recycling rate of co-products: 99% or higher 	P.246
	EN	Recycling rate at construction sites <ul style="list-style-type: none"> Recycling rate of rubble: 99.5% or higher Recycling rate of sludge: 95.0% or higher Recycling rate of industrial waste: 85.0% or higher Recycling rate of office recyclable waste Yokohama head office: 98.0% or higher 	PP.247-248
	SH	Global recycling of steel scrap <ul style="list-style-type: none"> Exceed FY2020 scrap trade volume (FY2024 target: +5% from FY2020) 	P.246
Water Use	ST	<ul style="list-style-type: none"> Maintain efficient use of water Recirculated water usage rate: 90% or higher 	P.249

Greenhouse Gas and Energy

CO₂ Emissions by Scope

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Scopes 1 and 2 total*1*2	All	million t-CO ₂	60.4	53.1	59.0	56.1	54.7
	ST Gr	million t-CO ₂	60.0	52.6	58.6	55.7	54.2
	ST	million t-CO ₂	56.0	49.1	54.7	52.3	50.1
	ST subsidiaries	million t-CO ₂	3.9	3.5	3.9	3.4	4.1
	EN Gr	million t-CO ₂	0.403	0.484	0.387	0.422	0.482
	EN	million t-CO ₂	0.0168	0.0141	0.0103	0.0081	0.0081
	EN subsidiaries	million t-CO ₂	0.386	0.470	0.377	0.414	0.474
	SH Gr	million t-CO ₂	0.0353	0.0296	0.0319	0.0316	0.0311
	SH	million t-CO ₂	0.0005	0.0004	0.0004	0.0004	0.0004
	SH subsidiaries	million t-CO ₂	0.0348	0.0292	0.0315	0.0311	0.0307
Scope1*3*4	All	million t-CO ₂	52.9	46.6	51.9	49.0	47.4
	ST Gr	million t-CO ₂	52.5	46.2	51.5	48.6	47.0
	ST	million t-CO ₂	49.8	43.8	48.8	46.4	44.1
	ST subsidiaries	million t-CO ₂	2.7	2.4	2.7	2.2	2.9
	EN Gr	million t-CO ₂	0.361	0.442	0.345	0.395	0.459
	EN	million t-CO ₂	0.0038	0.0024	0.0024	0.0029	0.0038
	EN subsidiaries	million t-CO ₂	0.357	0.439	0.343	0.393	0.455

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Scope2*6	All	million t-CO ₂	7.6	6.4	7.1	7.1	7.3
	ST Gr	million t-CO ₂	7.5	6.4	7.0	7.1* ⁵	7.3
	ST	million t-CO ₂	6.3	5.3	5.8	5.9	6.1
	ST subsidiaries	million t-CO ₂	1.2	1.1	1.2	1.1* ⁵	1.2
	EN Gr	million t-CO ₂	0.0422	0.0424	0.0418	0.0263	0.0232
	EN	million t-CO ₂	0.0129	0.0116	0.0079	0.0052	0.0043
	EN subsidiaries	million t-CO ₂	0.0293	0.0308	0.0339	0.0211	0.0189
	SH Gr	million t-CO ₂	0.0353	0.0296	0.0319	0.0316	0.0311
	SH	million t-CO ₂	0.0005	0.0004	0.0004	0.0004	0.0004
	SH subsidiaries	million t-CO ₂	0.0348	0.0292	0.0315	0.0311	0.0307
Unit CO ₂ emissions (numerator: Scopes 1 and 2 total; denominator: sales)	All	t-CO ₂ /billion yen	1,619	1,644	1,352	1,057	1,057
Scope3*7*8	All	thousand t-CO ₂ e	16,382	14,369	20,778	23,184	22,701
Category 1 Purchased goods and services	All	thousand t-CO ₂ e	12,557	11,026	17,244	19,750	19,118
Category 2 Capital goods	All	thousand t-CO ₂ e	1,401	1,226	1,221	1,166	1,239
Category 3 Fuel and energy related activities not included in Scopes 1 or 2	All	thousand t-CO ₂ e	728	671	717	736	760
Category 4 Upstream transportation and delivery	All	thousand t-CO ₂ e	489	419	454	450	440
Category 5 Waste generated in operations	All	thousand t-CO ₂ e	57	45	58	62	133
Category 6 Business travel	All	thousand t-CO ₂ e	4	4	5	4	5
Category 7 Employee commuting	All	thousand t-CO ₂ e	49	51	59	49	14
Category 15 Investments	All	thousand t-CO ₂ e	1,097	927	1,022	967	993

- *1 Data cover 75 companies
 - JFE Steel and 26 major domestic and overseas subsidiaries
 - JFE Engineering and 11 major domestic and overseas subsidiaries
 - JFE Shoji and 35 major domestic and overseas subsidiaries.
- *2 Starting with FY2021, figure includes data for an expanded list of JFE Steel, JFE Engineering, and JFE Shoji subsidiaries.
- *3 Data for JFE Steel include CO₂ emissions from non-energy sources.
- *4 Data for 3 JFE Steel major domestic subsidiary and a JFE Engineering major domestic subsidiary include CO₂ emissions from non-energy sources.
- *5 Emission factors for overseas subsidiaries have been revised.
- *6 CO₂ emission factors for purchased electricity in FY2023:
 - JFE Steel uses the emission factors of the Carbon Neutrality Action Plan of the Japan Iron and Steel Federation for energy purchased in FY2022.
 - JFE Steel's domestic consolidated subsidiaries, the JFE Engineering Group, and the JFE Shoji Group apply the adjusted emission factors of each electric power company for each fiscal year.
 - Overseas: Latest IEA emission factors
- *7 Coverage:
 - (Categories 1, 2, 3, 4, 5) JFE Steel, 21 JFE Steel major domestic subsidiaries, JFE Engineering, 1 JFE Engineering major domestic subsidiary, and JFE Shoji
 - (Category 6, 7) JFE Steel, 21 JFE Steel major domestic subsidiaries, JFE Engineering, 12 JFE Engineering major domestic and overseas subsidiaries, and JFE Shoji
 - (Category 15) Japan Marine United, and 10 JFE Steel equity-method affiliates (7 domestic and 3 overseas)
- *8 Sources: Green Value Chain Platform (Ministry of the Environment) and others

Other Greenhouse Gas

Items		Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
CO ₂ emissions from energy sources	CO ₂ emissions (Scopes 1 and 2 total)	ST Gr	million t-CO ₂	57.4	50.2	55.8	53.1	51.7
		ST	million t-CO ₂	54.2	47.3	52.6	50.4	48.3
		ST subsidiaries	million t-CO ₂	3.2	2.9	3.2	2.7	3.4
		EN Gr*1*2	thousand t-CO ₂	67.5	62.5	61.4	45.2	36.3
	Scope1	ST	million t-CO ₂	47.9	41.9	46.8	44.5	42.3
	Unit: CO ₂ emissions (denominator: crude steel production)	ST	t-CO ₂ /t-steel	2.03	2.08	2.03	2.09	2.06
CO ₂ emissions from non-energy sources		ST Gr*3	million t-CO ₂	2.65	2.40	2.74	2.59	2.48
		ST	million t-CO ₂	1.89	1.82	2.05	1.93	1.79
		ST subsidiaries	million t-CO ₂	0.76	0.58	0.69	0.66	0.69
		EN subsidiaries*4	million t-CO ₂	0.34	0.42	0.33	0.38	0.45

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023	
GHG emissions other than CO ₂	All	thousand t-CO ₂ e	103.3	96.1	103.0	55.2	117.9	
	Methane (CH ₄)	ST Gr	thousand t-CO ₂ e	72.9	68.3	74.6	35.4	78.5
		ST	thousand t-CO ₂ e	72.9	68.3	74.6	35.4	78.5
		ST subsidiaries	thousand t-CO ₂ e	—	—	0.005	0.005	0.005
	N ₂ O	All	thousand t-CO ₂ e	30.4	27.9	28.5	19.8	39.4
		ST Gr	thousand t-CO ₂ e	20.0	15.5	17.7	7.8	37.1
		ST	thousand t-CO ₂ e	20.0	15.5	17.7	7.8	37.1
		ST subsidiaries	thousand t-CO ₂ e	—	—	0.004	0.004	0.004
		EN subsidiaries* ⁴	thousand t-CO ₂ e	10.4	12.4	10.8	12.0	2.3
	GHG emitted during transportation* ⁵	ST Gr	million t-CO ₂	0.65	0.57	0.63	0.61	0.59
ST		million t-CO ₂	0.40	0.34	0.38	0.37	0.37	
ST subsidiaries		million t-CO ₂	0.25	0.23	0.25	0.24	0.22	
Contribution to CO ₂ emission reductions* ⁶	EN Gr	million t-CO ₂ /year	4.13	9.65	10.57	11.14	11.53	
	Biomass power generation	million t-CO ₂ /year	2.12	2,74	2.86	2.94	2.95	
	Waste power generation	million t-CO ₂ /year	1.53	3.37	3.40	3.72	3.80	
	Others* ⁷	million t-CO ₂ /year	0.48	3.54	3.57	3.59	3.84	
	Recycling (Includes fluorocarbon recovery and energy creation)	million t-CO ₂ /year	—	—	0.74	0.89	0.94	

*1 Data cover JFE Engineering and 11 major domestic and overseas subsidiaries.

*2 Starting with FY2021, expanded coverage of major subsidiaries for JFE Engineering.

*3 Data cover JFE Steel and 3 major domestic subsidiaries.

*4 J&T Recycling Co. is a domestic subsidiary of JFE Engineering.

*5 Data cover JFE Steel and 9 major domestic subsidiaries, which are specified consigners designated under the Japanese Energy Saving Act.

*6 Coverage:

- Up to FY2019, only JFE Engineering's domestic business is covered

- FY2020 data cover JFE Engineering's domestic and overseas businesses and its German subsidiary Standardkessel Baumgarte GmbH (SBG)

- From FY2021, JFE Engineering's domestic and overseas businesses, J&T Recycling Corporation, JFE Urban Recycle Corporation, and German subsidiary Standardkessel Baumgarte GmbH (SBG) are covered

*7 Coverage: Others (digestion gas, geothermal, solar power, wind, waste heat recovery, fuel conversion, energy services, logistics products)

■ Energy Consumption

Items		Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Energy consumption and unit energy consumption	Energy consumption	All	PJ	670	592	654	627	612
		ST Gr	PJ	669	591	652	625	611
		ST	PJ	620	545	602	581	557
		ST subsidiaries	PJ	48.8	45.2	49.6	43.9	53.9
		EN Gr	PJ	1.3	1.2	1.3	1.2	1.2
		SH Gr	PJ	0.6	0.6	0.7	0.7	0.7
	Unit energy consumption (crude steel production)	ST	GJ/t-steel	23.2	24.0	23.3	24.1	23.7
	Energy consumption (Crude petroleum equivalent)	EN	kl	8,788	8,000	7,636	7,772	7,756
	YOY ratio of unit energy consumption	EN	%	80.7	91.0	95.5	107.9	94.3
	Recovered energy for recycling	Supplied to society	ST	%	39	38	38	37
Consumed internally		ST	%	61	62	62	63	61

■ Modal Shift

Items		Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
All transportation	Ship and rail	ST	%	59.6	58.4	58.3	59.0	57.9
	Truck	ST	%	40.4	41.6	41.7	41.0	42.1
Transportation of a distance of 500 km or more	Ship and rail	ST	%	90.9	91.6	90.0	92.1	93.6
	Truck	ST	%	9.1	8.4	10.0	7.9	6.4

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

Greenhouse Gas and Energy (Supplementary Data)

■ CO₂ Emissions and Energy Consumption of JFE Steel Group Subsidiaries (FY2023)

Company name	CO ₂ emissions (unit: thousand t-CO ₂)	Energy consumption (unit: PJ)
JFE Mineral & Alloy Company, Ltd.*	1,724.7	9.83
JFE Bars & Shapes Corporation	533.3	9.39
JFE Chemical Corp.	224.8	4.15
JFE LOGISTICS CORPORATION	151.3	2.26
JFE Galvanizing & Coating Co., Ltd.	48.3	1.01
JFE Plastic Resource Corporation	20.0	0.37
MIZUSHIMA RIVERMENT CORP.	8.1	0.11
JFE Container Co., Ltd.	9.6	0.19
J-Logitech Co., Ltd.	7.6	0.11
Galvatex Corporation	3.7	0.08
JFE Metal Products & Engineering Inc.	8.6	0.16
JFE Welded Pipe Manufacturing Co., Ltd.	8.3	0.15
JFE Techno-wire Corporation	3.7	0.08
JFE PRECISION CORPORATION	3.5	0.07
K-PLASHEET CORPORATION	4.7	0.07
JFE LIFE CORPORATION	5.6	0.10
CHIBA RIVERMENT AND CEMENT CORP.	6.0	0.12
JFE Steel Pipe Co., Ltd.	2.7	0.06
GECOSS CORPORATION	3.2	0.06
JFE Kozai Corporation	3.1	0.06
JFE Ferrite Corporation	3.6	0.05
5 overseas companies	1,288.0	16.38
Total	4,072.5	44.86

* Data for Mineral & Alloy Company, Ltd. since FY2021 has included CO₂ emissions from Mizushima Ferroalloy Co., Ltd. and JFE Material Co., Ltd., which merged into JFE Mineral & Alloy Company in April 2022.

CO₂ Emissions from Energy Sources and Energy Consumption of JFE Engineering Group Subsidiaries (FY2023)

Company name	CO ₂ emissions (unit: thousand t-CO ₂)	Energy consumption (unit: PJ)
J&T Recycling Corporation	38.5	0.8
Fujikako, Inc.	1.7	0.030
NORTHERN JAPAN MACHINERY Corporation	0.9	0.015
TOHOKU DOCK TEKKO CO., LTD.	0.8	0.014
Asuka Soken Co., Ltd.	0.8	0.012
JFE Pipeline Engineering Corporation	0.5	0.007
JFE Technos Corporation	0.1	0.002
JFE Project One Co., Ltd.	0.1	0.002
J&M Steel Solutions Company Limited	0.4	0.008
Total	43.9	0.893

* CO₂ emissions data of J Farm Corporation has been included in the data of JFE Engineering Corporation from the FY2023 results.
 * CO₂ emissions data of JFE Environmental Service Corporation has been included in the data of J&T Recycling Corporation from the FY2023 results.

Chemical substances

Air Emissions

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
SOx emissions* ¹	ST Gr	million Nm ³	4.3	3.3	3.5	3.3	3.6
	ST	million Nm ³	4.3	3.3	3.5	3.3	3.6
	ST subsidiaries	million Nm ³	0.04	0.03	0.03	0.04	0.04
NOx emissions* ²	ST Gr	million Nm ³	11.3	10.4	11.4	10.2	10.1
	ST	million Nm ³	11.1	10.3	11.2	10.1	9.9
	ST subsidiaries	million Nm ³	0.17	0.14	0.18	0.15	0.16

*1 11 JFE Steel consolidated subsidiaries in Japan.

*2 11 JFE Steel consolidated subsidiaries in Japan.

■ Release to Waterways

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
COD (chemical oxygen demand)	All*1	t/day	3.4	3.1	3.1	3.1	2.6
	ST	t/day	3.2	2.9	2.9	2.8	2.3
	ST subsidiaries	t/day	0.15	0.17	0.23	0.25	0.27
	EN*2	kg/day	8.4	8.7	8.4	6.6	4.8

*1 Coverage:

- JFE Steel and 10 consolidated subsidiaries in Japan.

- JFE Engineering

*2 This report uses the maximum value of each year.

■ PRTR-Registered Substances

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023	
PRTR-registered substances*1*2	Amount released	All*3	t	918	754	827	750	917
		ST Gr	t	766	596	672	609	790
		ST	t	481	341	380	366	510
		ST subsidiaries	t	285	255	292	243	280
		EN Gr	t	152	158	155	141	126
		EN	t	107	121	116	103	101
		EN subsidiaries	t	45.4	36.7	39.3	37.8	25.1
	Amount transferred	All*3	t	7,866	5,949	9,845	12,809	11,217
		ST Gr	t	7,832	5,910	9,811	12,779	11,193
		ST	t	1,865	1,694	1,378	1,278	1,192
		ST subsidiaries	t	5,967	4,216	8,433	11,501	10,001
		EN Gr	t	34	39	34	30	23
		EN	t	29	26	30	26	19
		EN subsidiaries	t	5.4	12.5	4.4	4.4	3.9

*1 Coverage:

- JFE Steel and 15 consolidated subsidiaries in Japan.

- JFE Engineering and 4 consolidated subsidiaries in Japan.

*2 Excluding dioxins

*3 JFE Shoji is not included in the scope of the report as the company is not subject to PRTR registration.

Chemical Substances (Supplementary Data)

■ SOx and NOx Emissions of JFE Steel Group Subsidiaries (FY2023)

Company name	SOx emissions (unit: Nm ³)	NOx emissions (unit: Nm ³)
JFE Mineral & Alloy Company, Ltd.	15,880	95,960
CHIBA RIVERMENT AND CEMENT CORP.	85	695
MIZUSHIMA RIVERMENT CORP.	0	647
JFE PRECISION CORPORATION	746	186
JFE Plastic Resource Corporation	24	14
JFE Bars & Shapes Corporation	9,534	11,324
JFE Metal Products & Engineering Inc.	29	2,062
JFE KENZAI FENCE CO., LTD.	0	0
JFE Galvanizing & Coating Co., Ltd.	1,354	12,890
JFE Container Co., Ltd.	93	0
JFE Welded Pipe Manufacturing Co., Ltd.	0	0
JFE Steel Pipe Co., Ltd.	0	0
Galvatex Corporation	0	454
JFE Techno-wire Corporation	0	0
JFE Kozai Corporation	0	0
GECOSS CORPORATION	0	0
JFE LOGISTICS CORPORATION	0	0
J-Logitec Co., Ltd.	0	0
JFE Chemical Corp.	9,471	31,113
K-PLASHEET CORPORATION	168	0
JFE LIFE CORPORATION	0	0
Total	37,383	155,345

Use of Natural Resources

Input and Products supplied

	Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Input	Raw materials for steel production*	ST	million t	64.3	56.2	63.4	60.4	56.1
	Iron ore*	ST	million t	38.7	32.9	37.6	35.7	33.4
	Coal	ST	million t	20.3	18.1	19.9	19.1	17.5
	Lime	ST	million t	5.3	5.2	5.9	5.6	5.2
	Recycled materials (steel scrap)	ST	million t	1.1	0.8	1.2	0.9	0.8
	Raw materials	EN	thousand t	39.4	36.9	38.6	27.9	24.0
Products supplied	Steel products	ST	million t	26.7	22.8	25.9	24.1	23.4
	Engineering products	EN	thousand t	36.6	34.7	37.4	27.0	23.0

*Data for FY2019 though FY2022 was revised to increase accuracy.

Co-Products and Wastes

	Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Co-products	Amount generated* ¹	ST Gr	million t	15.6	13.9	14.4	14.1	13.3
		ST* ²	million t	15.1	13.4	13.9	13.5	12.7
		ST subsidiaries	million t	0.5	0.5	0.5	0.6	0.6
	Amount recycled internally	ST	million t	5.0	3.3	3.3	2.9	2.9
	Internal recycle rate	ST	%	32.9	24.9	24.0	21.7	22.4
	Emissions* ¹	ST Gr	million t	10.3	10.2	10.8	10.8	10.1
		ST	million t	10.2	10.1	10.6	10.6	9.9
		ST subsidiaries	million t	0.1	0.1	0.2	0.2	0.2
	Used by local communities	ST	million t	10.1	10.0	10.5	10.5	9.8
	Rate of local communities use	ST	%	66.8	74.8	75.7	77.8	77
	Landfill amount* ¹	ST Gr	million t	0.074	0.060	0.094	0.167	0.180
		ST	million t	0.043	0.037	0.042	0.073	0.083
		ST subsidiaries	million t	0.031	0.023	0.052	0.094	0.097
Recycling rate	ST	%	99.7	99.7	99.7	99.5	99.4	

Items		Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Wastes	Emissions*3*4	EN Gr	thousand t	211.0	159.1	249.2	223.7	193.1
	Offices	EN	t	367.1	329.2	235.3	259.4	219.4
		Yokohama HO	t	299.0	256.9	156.7	195.0	157.2
		Tsu works	t	68.2	72.3	78.6	64.4	62.2
	Productions	EN	t	1,340.5	1,072.3	803.0	821.4	705.8
		Tsurumi works	t	653.8	519.8	364.7	461.6	338.3
		Tsu works	t	686.7	552.5	438.3	359.8	367.5
	Constructions	EN	t	145,397.7	97,387.9	190,242.3	162,747.2	134,157.5
	Subsidiaries	EN subsidiaries	t	63,876.7	60,296.7	57,960.3	59,841.4	57,990.0
	Recycling rate (offices)	EN	%	97.3	96.8	96.1	96.4	92.1
		Yokohama HO	%	98.8	99.1	98.5	98.4	97.7
		Tsu works	%	85.2	87.2	88.4	85.7	87.1
	Recycling rate (production)	EN	%	68.0	48.8	46.8	54.0	50.4
		Tsurumi works	%	79.4	72.0	68.3	75.9	60.9
		Tsu works	%	60.9	33.8	28.0	25.0	42.3
	Recycling rate (construction)	EN	%	97.1	98.3	98.6	99.3	97.5
	Landfill	EN	t	4,489.3	2,011.6	3,035.6	1,456.7	3,497.5
	Offices	EN	t	8.5	9.1	7.4	7.7	7.4
		Yokohama HO	t	3.3	2.1	2.2	2.9	3.0
		Tsu works	t	5.2	7.0	5.2	4.8	4.4
	Productions	EN	t	312.6	351.2	322.6	287.7	235.2
Tsurumi works		t	77.3	75.2	89.4	85.9	80.5	
Tsu works		t	235.3	276.0	233.2	201.8	154.7	
Constructions	EN	t	4,168.2	1,651.3	2,705.6	1,161.3	3,254.8	
Recycling rate	EN	%	95.8	95.9	96.5	97.4	96.1	

*1 Data cover JFE Steel and 22 consolidated subsidiaries in Japan.

*2 Byproducts generated by JFE Steel are mostly reused as offshore, land, or construction materials.

*3 Data cover JFE Engineering and 9 consolidated subsidiaries in Japan.

*4 Data from FY2019 includes wastes generated at offices and productions of JFE Engineering.

■ Wastes at JFE Engineering Construction Sites

Items		Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Rubble	Amount generated	EN	t	113,637	78,100	159,309	141,888	119,708
	Recycle rate	EN	%	98.6	99.4	99.4	99.9	97.8
	Landfill amount	EN	t	1,533	484	940	173	2,632
Sludge	Amount generated	EN	t	17,225	12,399	24,350	14,806	9,679
	Recycle rate	EN	%	98.8	98.9	96.9	99.0	99.3
	Landfill amount	EN	t	205	135	683	130	56
Industrial waste excluding rubble and sludge	Amount generated	EN	t	13,788	6,678	6,583	6,054	4,771
	Recycle rate	EN	%	85.0	85.4	81.6	84.4	87.1
	Landfill amount	EN	t	1,923	868	1,083	858	566

■ Paper Consumption at JFE Shoji

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Consumption of copier papers	SH	boxes	4,675	3,021	3,033	2,860	2,934
	Tokyo	boxes	2,516	1,333	1,471	1,376	1,396
	Osaka	boxes	399	310	337	351	391
	Nagoya	boxes	293	157	154	177	162
	Branch	boxes	1,467	1,221	1,071	956	985

Water Use

Water Withdrawal and Discharge

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Amount of water accepted*1	All	million t	242	237	246	240	226
	ST Gr	million t	241	236	245	239	224
	ST	million t	221	215	226	220	208
	ST subsidiaries	million t	19.8	20.9	18.7	18.2	16.1
	EN Gr	million t	1.410	1.296	1.141	1.35	1.24
	EN	million t	0.106	0.072	0.063	0.064	0.073
	EN subsidiaries	million t	1.304	1.223	1.078	1.28	1.17
	SH Gr	million t	0.149	0.160	0.154	0.154	0.145
	SH	million t	—	—	—	—	—
	SH subsidiaries	million t	0.149	0.160	0.154	0.154	0.145
Amount of water released*2	ST Gr	million t	143	141	144	143	139
	ST	million t	126	123	128	128	125
	ST subsidiaries	million t	17.0	18.3	15.6	15.4	13.9
	EN	million t	0.126	0.157	0.132	0.122	0.122
Amount of water consumption*2	ST Gr	million t	3,616	3,331	3,442	3,475	3,242
	ST	million t	3,323	3,066	3,207	3,242	3,035
	ST subsidiaries	million t	293	265	235	233	207
Amount evaporated	ST	million t	95	92	98	92	83
Ratio of amount released and evaporated	ST	%	6.6	7.0	7.0	6.8	6.9
Amount recycled*2	ST Gr	million t	3,375	3,096	3,197	3,237*4	3,017
	ST	million t	3,102	2,851	2,981	3,022*4	2,826
	ST subsidiaries	million t	273	245	216	215	191
Recycling rate*2*3	ST	%	93.4	93.0	93.0	93.2	93.1
	ST subsidiaries	%	93	92	92	92	92

*1 Coverage:

- JFE Steel and 22 consolidated subsidiaries in Japan.
- JFE Engineering and 6 consolidated subsidiaries in Japan.
- 33 JFE Shoji domestic and overseas consolidated subsidiaries.

*2 Data cover JFE Steel and 22 JFE Steel consolidated subsidiaries in Japan.

*3 Industrial water circulated (%) = (Total amount – industrial water accepted)/total amount used × 100

*4 Revised the prior year data to increase accuracy.

Breakdown of Water Intake and Discharge Areas

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Total amount accepted	All*	million t	221.0	214.8	226.1	220.4	208.4
River/lake		million t	0	0	0	0	0
Groundwater		million t	0	0	0	0	0
Industrial water/waterworks		million t	221.0	214.8	226.1	220.4	208.4
Ocean		million t	0	0	0	0	0
Rainwater		million t	0	0	0	0	0
Other intake source		million t	0	0	0	0	0
Total amount released	All*	million t	126.8	123.6	128.8	128.5	125.8
Ocean		million t	126.3	123.1	128.3	128.1	125.4
Surface water		million t	0	0	0	0	0
Underground/well		million t	0	0	0	0	0
Off-site water processing		million t	0.4502	0.4796	0.4709	0.4300	0.4158
Beneficial use/other use		million t	0	0	0	0	0
Other discharge source		million t	0	0	0	0	0

* Data cover JFE Steel and JFE Engineering.

Water Use (Supplementary Data)

Amount of Water Accepted and Released at JFE Steel Group Subsidiaries (FY2023)

Company name	Amount accepted (unit: thousand tonnes)	Amount released (unit: thousand tonnes)
JFE Mineral & Alloy Company, Ltd.	5,566	5,530
CHIBA RIVERMENT AND CEMENT CORP.	12	12
MIZUSHIMA RIVERMENT CORP.	10	10
JFE PRECISION CORPORATION	140	140
JFE Plastic Resource Corporation	21	21
JFE Bars & Shapes Corporation	4,583	2,808
JFE Metal Products & Engineering Inc.	150	147
JFE KENZAI FENCE CO., LTD.	21	21
JFE Galvanizing & Coating Co., Ltd.	525	525
JFE Container Co., Ltd.	251	251
JFE Welded Pipe Manufacturing Co., Ltd.	38	38
JFE Steel Pipe Co., Ltd.	2	2
Galvatex Corporation	528	528
JFE Techno-wire Corporation	108	108

Company name	Amount accepted (unit: thousand tonnes)	Amount released (unit: thousand tonnes)
JFE Kozai Corporation	13	13
GECOSS CORPORATION	66	66
JFE LOGISTICS CORPORATION	106	106
J-Logitec Co., Ltd.	3	3
JFE Chemical Corp.	3,432	3,073
K-PLASHEET CORPORATION	34	29
JFE LIFE CORPORATION	502	489
Total	16,108	13,919

Amount of Water Accepted at JFE Engineering Group Subsidiaries (FY2023)

Company name	Amount accepted (unit: thousand tonnes)
J&T Recycling Corporation	1,170
NORTHERN JAPAN MACHINERY Corporation	0.006
TOHOKU DOCK TEKKO CO., LTD.	0.02
Fujikako, Inc.	0.02
Total	1,170

* Water intake data of J Farm Corporation has been included in the data of JFE Engineering Corporation from the FY2023 results.
 * Water intake data of JFE Environmental Service Corporation has been included in the data of J&T Recycling Corporation from the FY2023 results.

Environmental Management

Environmental Management System

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023	
% covered by ISO 14001 certification	Base	All	%	58	58	54	52	52
		ST Gr	%	21	21	18	44	44
		EN Gr	%	9	9	8	44	43
		SH Gr	%	28	28	27	64	64
	Employee	All	%	74	70	68	67	72
		ST Gr	%	75	74	72	70	72
		EN Gr	%	60	51	50	50	47
		SH Gr	%	92	89	83	81	80
Environmental audit (number of sites)	ST Gr	sites	32	24	29	28	27	
	EN Gr	sites	48	28	52	50	52	
Environmental education conducted (total participants)	EN Gr	people	1,063	731	1,131	889	897	

Environmental Accounting

Breakdown of environmental protection cost		FY2022		FY2023	
		Investment (billion yen)	Cost (billion yen)	Investment (billion yen)	Cost (billion yen)
Management	Impact monitoring and measurement, and EMS expenses and education	14	27	12	24
Global warming countermeasures	Saving and efficiently using energy	55	359	195	365
	Recycling industrial water	32	216	49	257
Conservation of natural resources	Recycling and waste management of internally generated materials, etc.	14	62	0	57
Environmental protection	Air pollution countermeasures	159	312	69	307
	Water pollution countermeasures	43	107	18	115
	Prevention of soil contamination, noise, vibration, and subsidence	0	5	0	5
Other	Charges, etc.	—	14	—	14
R&D	Technologies for protecting the environment, saving energy, and preventing global warming	10	105	10	94
Societal activities	Support for nature preservation and forestation, information disclosure, exhibitions, and public relations	—	7	—	7
Total		327	1,215	352	1,244

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

Environmental Accounting (Accumulated)

Items	Scope	Unit	FY2019	FY2020	FY2021	FY2022	FY2023
Energy-saving investment (accumulated)	All	billion yen	5,321	5,465	5,654	5,708	5,903
Environmental protection investment (accumulated)	All	billion yen	7,276	7,421	7,709	7,971	8,119