

Data Book

Mass Balance Table for the Group (Fiscal 2019)

INPUT		
Raw materials <input checked="" type="checkbox"/>	Energy <input checked="" type="checkbox"/>	Water resources <input checked="" type="checkbox"/>
Primary raw materials	Fuel	Fresh water
Domestic operating sites 2,429kt	Domestic operating sites 3,489TJ	Domestic operating sites 19.6 million cubic meters
Overseas operating sites 7kt	Overseas operating sites 2,267TJ	Overseas operating sites 9.5 million cubic meters
Total 2,436kt	Total 5,756TJ	Total 29.1 million cubic meters
Recycled raw materials	Electricity*	Seawater
Domestic operating sites 261kt	Domestic operating sites 14,783TJ	Domestic operating sites 89.9 million cubic meters
Overseas operating sites 2kt	Overseas operating sites 9,526TJ	Overseas operating sites — million cubic meters
Total 263kt	Total 24,309TJ	Total 89.9 million cubic meters

*Includes thermal energy (consuming steam, hot water and cold water) supplied by third parties.

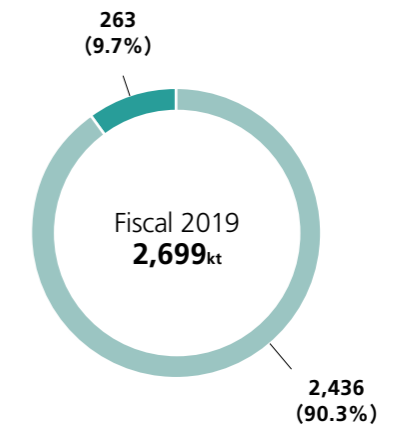
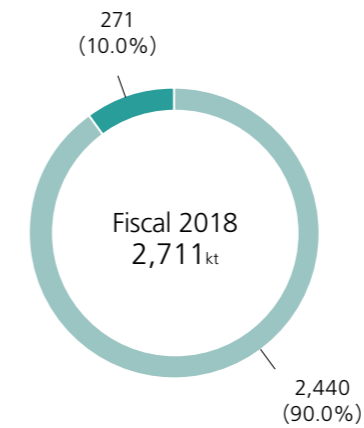
JX Nippon Mining & Metals Group

OUTPUT			
Principal products <input checked="" type="checkbox"/>	Emissions		
Copper concentrate 389kt	CO₂ <input checked="" type="checkbox"/>	SO_x <input checked="" type="checkbox"/>	NO_x <input checked="" type="checkbox"/>
Refined copper 716kt	Total of domestic operating sites	Domestic operating sites 4.5 kt	Domestic operating sites 0.6 kt
Gold 39t	Scope 1 377 kt	Overseas operating sites 0.1 kt	Overseas operating sites 0.1 kt
Silver 349t	Scope 2 672 kt	Total 4.6 kt	Total 0.7 kt
Platinum 525kg	Total of overseas operating sites	Final disposal of waste materials <input checked="" type="checkbox"/>	Wastewater
Palladium 2,809kg	Scope 1 155 kt	Domestic operating sites 1.9 kt	Domestic operating sites 109.4 million cubic meters
Other metals (selenium, tellurium) 289t	Scope 2 441 kt	Overseas operating sites 8.2 kt	Overseas operating sites 0.7 million cubic meters
Electro-deposited and treated rolled copper foil 7kt	Total 1,645 kt	Chemical substances (release and transfer) <input checked="" type="checkbox"/>	Total 110.1 million cubic meters
Copper alloy, special steel strips, etc. 31 kt	Total of domestic operating sites		
Titanium sponge 30kt	0.44kt		
Sulfuric acid (by-product) 1,785kt			

Raw materials

Material Input

Primary raw materials Recycled raw materials

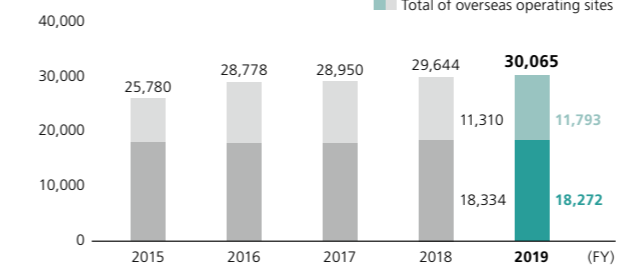


Energy

Energy Consumption

(calorific value, terajoules)

Total of domestic operating sites Total of overseas operating sites



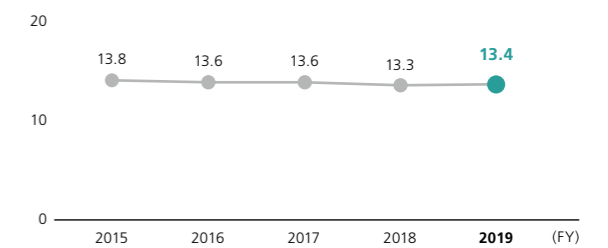
* Energy consumption figures of domestic operating sites and total energy consumption figures of the Group for fiscal 2018 have been corrected due to errors in these figures.

Breakdown by Fuel Type

	Domestic operating sites	Overseas operating sites
Kerosene (kL)	1,847	—
Light oil (kL)	2,746	51,990
Class A heavy oil (kL)	12,229	1,109
Class B and C heavy oil (kL)	29,226	5,129
Reclaimed oil (kL)	1,191	—
LPG/butane (t)	5,087	6
LNG (t)	4,898	—
Coke (t)	5,086	—
Petroleum coke (t)	5,334	—
City gas (thousand cubic meters)	16,215	1,101

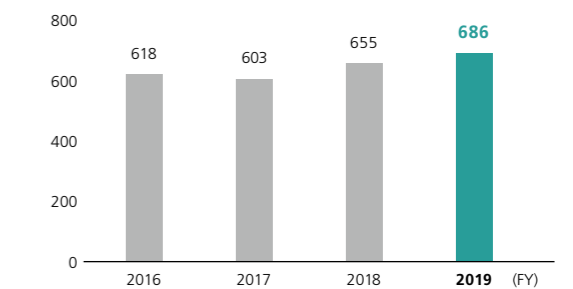
Energy Consumption Intensity at Smelters and Refineries (Fuel and Electricity)

(calorific value in gigajoules per ton of refined copper produced)



Energy Consumption in Logistics Stages (Domestic)

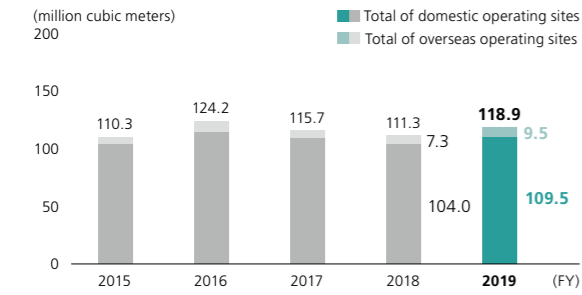
(calorific value, terajoules)



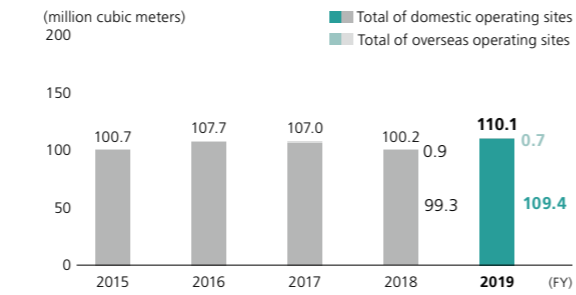
* Applicable to specified consigners as defined in the Act on the Rational Use of Energy. Three Group companies fall under this definition: JX Nippon Mining & Metals Corporation, Kasuga Mines Co., Ltd., and Pan Pacific Copper Co., Ltd.

Water Resources

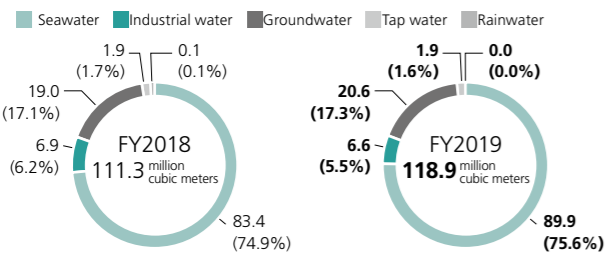
Water Usage*¹



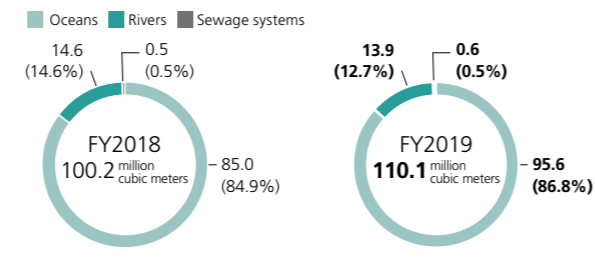
Water Discharge Volume*²



Total Water Usage*¹



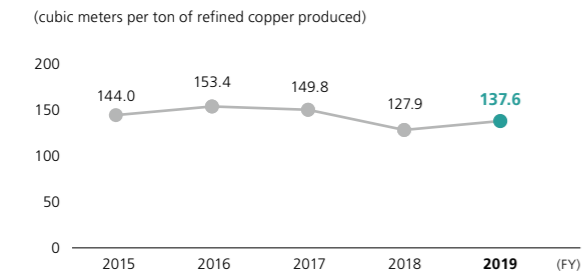
Total Water Discharge*²



*¹ Seawater usage at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd. is calculated based on pumping capacity. Groundwater usage at JX Nippon Mikkaichi Recycle Co., Ltd. up to fiscal 2016 was calculated by multiplying water discharge volume by a fixed rate. Freshwater usage at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd. and water usage at the other operating sites are based on flowmeter readings or on invoices from the site's respective water utility. We have retroactively revised seawater usage figures for the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd. as far back as fiscal 2015 due to changes made in the figure's calculation method.

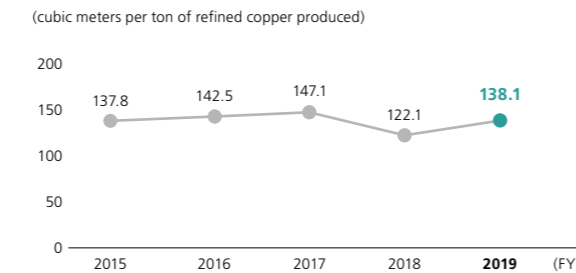
*² The volume of water discharged into public waters (oceans and rivers) at each operating site represents the following: an amount calculated based on drainage weirs (Hitachi Works, Isohara Works, Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd., JX Nippon Tomakomai Chemical Co., Ltd., and JX Nippon Mikkaichi Recycle Co., Ltd.); an amount obtained by multiplying groundwater usage by a fixed rate (Kurami Works, Toho Titanium Co., Ltd.'s Headquarters & Chigasaki Plant); an amount otherwise calculated (Toho Titanium Co., Ltd.'s Yahata Plant); or an amount based on flowmeter readings (other operating sites). The volume of water discharged into the sewage system is based on flowmeter readings or on invoices from the site's respective sewage utility. We have retroactively revised figures for ocean discharge for the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd. as far back as fiscal 2015 due to changes made in the figure's calculation method.

Water Usage Intensity at Smelters and Refineries



* We have retroactively revised figures for water usage intensity as far back as fiscal 2015 due to changes made in the calculation method for seawater usage volume at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.

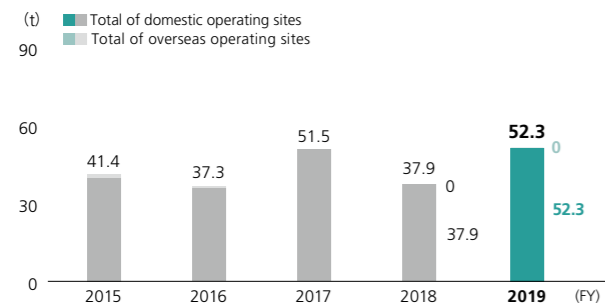
Water Discharge Intensity at Smelters and Refineries



* We have retroactively revised figures for water discharge intensity as far back as fiscal 2015 due to changes made in the calculation method for ocean discharge volume at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.

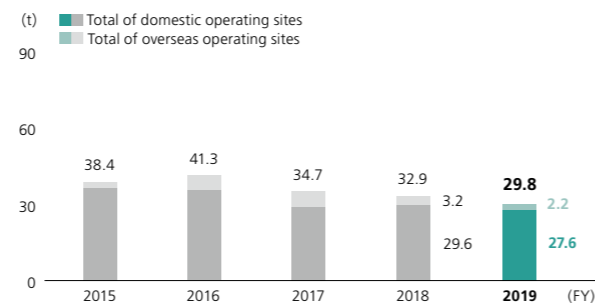
Water Pollutants

COD Load



* We have retroactively revised figures for COD load from domestic operating sites as far back as fiscal 2015 due to changes made in the calculation method for ocean discharge volume at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.

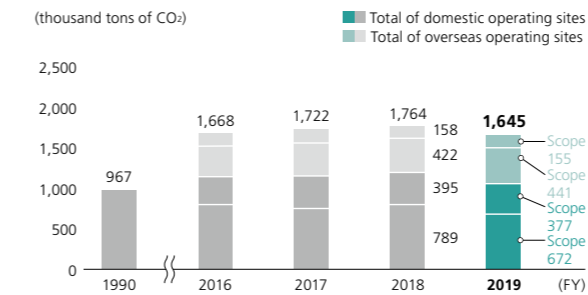
BOD Load



* Totals are for operating sites subject to legal requirements (sites that discharge water into rivers or streams).

Climate Change

CO₂ Emissions from Manufacturing Activities

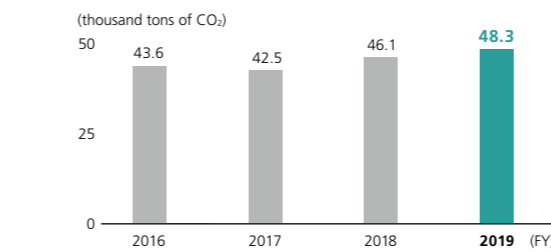


* Scope 1 emissions are those from energy consumption (fuel), emissions other than from energy consumption (waste oil, waste plastic, sludge, waste wood), and emissions from reducing agents, converted to equivalent CO₂.

* Scope 2 emissions are those from electricity consumption converted to equivalent CO₂. Emissions from electricity consumption include those from thermal energy (consuming steam, hot water, cold water) supplied by third parties.

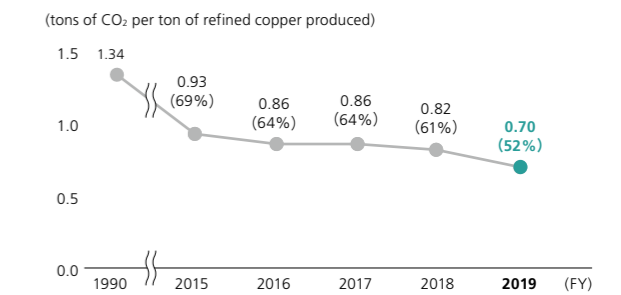
* Domestic Scope 1 emissions figures and combined domestic and overseas CO₂ emissions figures of the Group for fiscal 2018 have been corrected due to errors in these figures.

CO₂ Emissions in Logistics Stages



* Applicable to specified consigners as defined in the Act on the Rational Use of Energy. Three Group companies fall under this definition: JX Nippon Mining & Metals Corporation, Kasuga Mines Co., Ltd., and Pan Pacific Copper Co., Ltd.

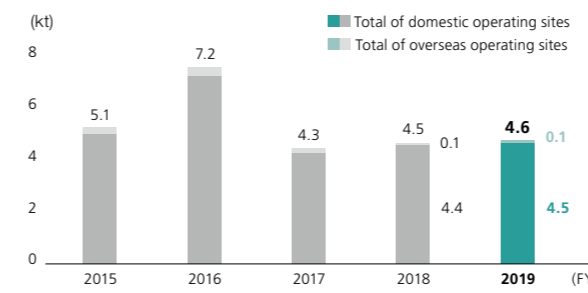
CO₂ Emission Intensity at Smelters and Refineries



* Percentages are in relation to 1990 levels. The emissions covered include Scope 1 and Scope 2.

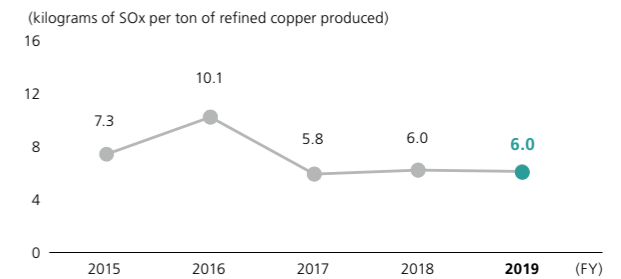
Air Pollutants

SO_x Emissions

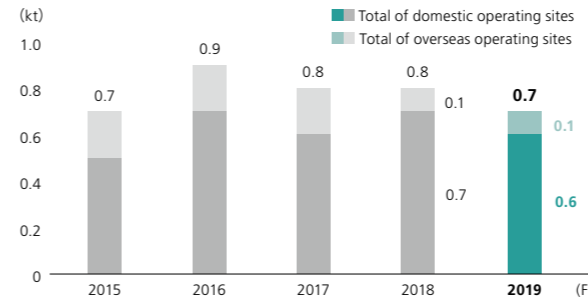


* Totals are for operating sites subject to emissions regulations.

SO_x Emission Intensity at Smelters and Refineries

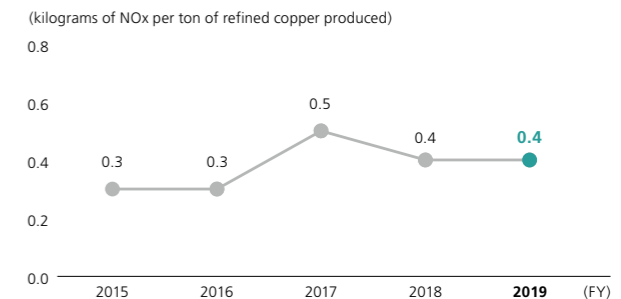


NO_x Emissions



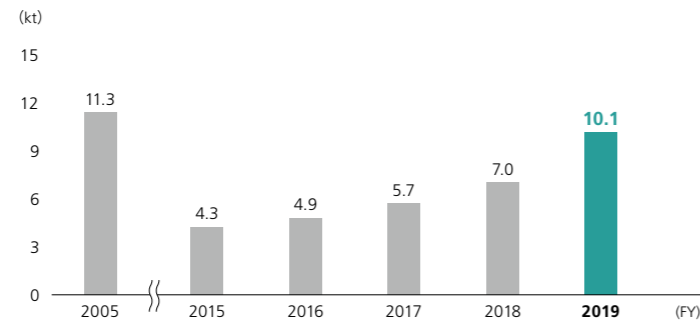
* Totals are for operating sites subject to emissions regulations.

NO_x Emission Intensity at Smelters and Refineries



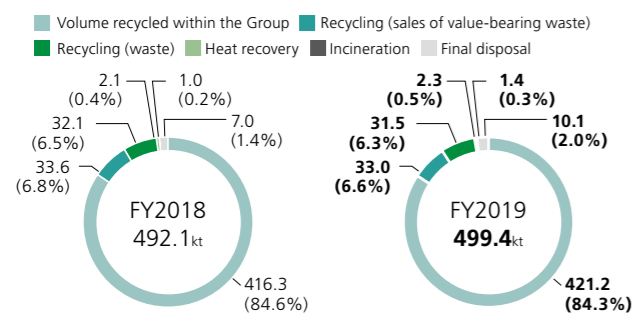
Waste Materials

Volume of Final Disposal of Waste

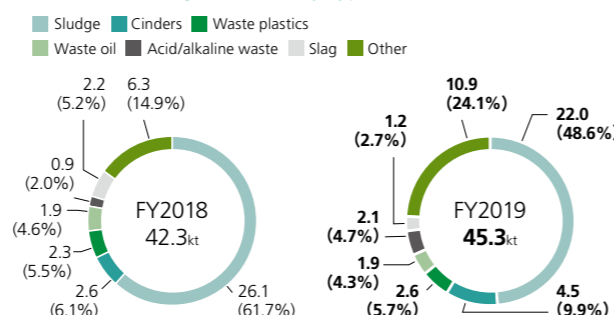


* These figures do not include approximately 6.9 thousand tons disposed of in offshore landfills by Toho Titanium. They also do not include approximately 30.4 million tons of slag from the Caserones Copper Mine.

Total Volume of Waste and Sellable Materials Generated

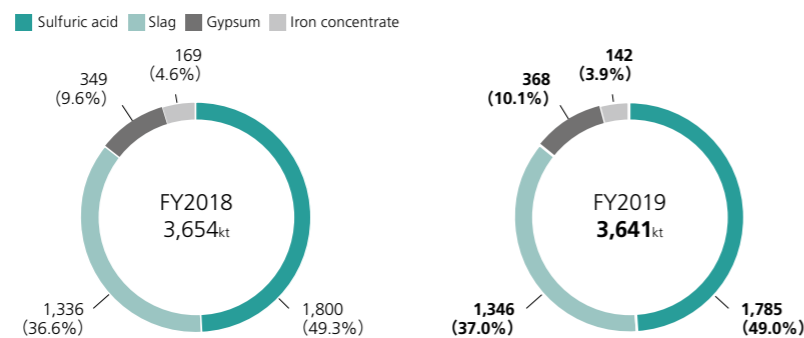


Total Discharge Volume by type of waste materials



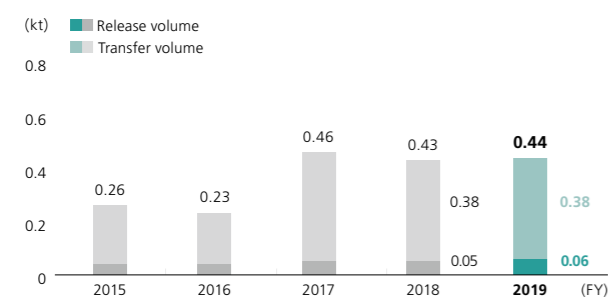
By-Product

By-Product Production



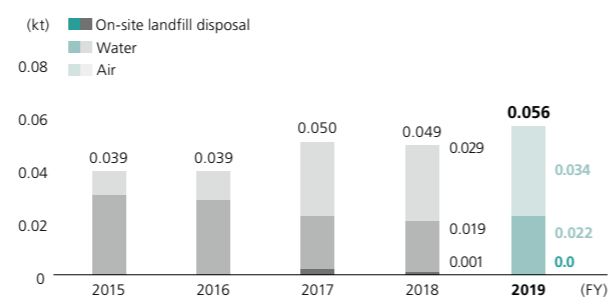
Chemical Substances

Volumes of Release and Transfer of PRTR Substances



* We have retroactively revised figures for PRTR release volumes and PRTR water release volumes as far back as fiscal 2015 due to changes made in the calculation method for ocean discharge volume at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.

Breakdown of Release Volumes of PRTR Substances



* We have retroactively revised figures for PRTR release volumes and PRTR water release volumes as far back as fiscal 2015 due to changes made in the calculation method for ocean discharge volume at the Saganoseki Smelter & Refinery of Pan Pacific Copper Co., Ltd.

Volumes of Release and Transfer of Major PRTR Substances in Fiscal 2019

No.	Cabinet order no.	Chemical substance	Release volume			Transfer volume	
			Air	Water	On-site landfill disposal	Sewage systems	Waste Materials
1	31	Antimony and its compounds	0.1	0.4	0	0	32.4
2	75	Cadmium and its compounds	0.1	0.1	0	0	21.0
3	132	Cobalt and its compounds	0	0.1	0	0	13.2
4	300	Toluene	22.8	0	0	3.2	250.8
5	305	Lead compounds	0.7	0.2	0	0	5.3
6	309	Nickel compounds	0.1	0.5	0	0	12.7
7	332	Arsenic and its inorganic compounds	0.4	0.5	0	0	14.5
8	354	Dibutyl phthalate	0	0	0	0	6.0
9	384	1-Bromopropane	6.2	0	0	0	0
10	405	Boron compounds	0	11.9	0	0	1.6
11	412	Manganese and its compounds	0	0.8	0	0	16.4
12	243	Dioxins	0.2	0	0	0	2.3

* The values given are totals for companies with operating sites subject to reporting requirements under the PRTR Act (JX Metals Trading Co., Ltd., Kasuga Mines Co., Ltd., and the domestic companies defined in Scope of this Report on page 3 as subject to Environment section reporting). Of the 51 chemical substances subject to reporting, those totaling at least 5.0 tons in any category, and dioxins, are listed here. There were no cases of chemical substances released into the soil.

Occupational Health and Safety

Occupational and Other Accidents*1

Category		2017	2018	2019
Safety performance at domestic operating sites	Fatalities (persons)*2	0	0	0
	Accidents with lost work days (persons)*2	3	10	1
	Accidents without lost work days (persons)*2	8	7	6
	Total(persons)	11	17	7
	Frequency rate of industrial accidents*3	0.25	0.46	0.00
	Severity rate of industrial accidents*3	0.01	0.00	0.00
	Explosions and fires (incidences)*2	0	3*4	2*4
(Reference) Safety performance at overseas operating sites	Fatalities (persons)*5	0	0	1
	Accidents with lost work days (persons)*5	13	16	18
	Accidents without lost work days (persons)*5	3	2	3
	Total (persons) *5	16	18	22

*1 Safety performance data is compiled on a calendar year basis (January to December).

*2 Aggregate values are for the entire Group (but excluding Toho Titanium Co., Ltd.).

*3 Both the frequency rate (the number of casualties in industrial accidents per 1 million total hours actually worked) and the severity rate (the number of working days lost per 1,000 total actual working hours) of industrial accidents are for the Company only.

*4 No physical injuries were caused as a result of explosions/fires.

*5 Figures include performance of Group companies and subcontractors.

(Reference) In 2019, the frequency and severity rate of industrial accidents for all businesses in Japan were 1.80 and 0.09, respectively. (Source: Ministry of Health, Labor and Welfare, "Survey on Industrial Accidents")

Developing Human Resources

Training Programs Implemented in Fiscal 2019

		(hours)		
		Male	Female	Total
Total program hours (annual)	Managerial staff	7,487	161	7,648
	General employees	65,512	8,915	74,427
	Total	72,999	9,076	82,075
Per employee	Managerial staff	13	16	
	General employees	30	31	
	Overall	26	30	

* Survey scope: Employees of JX Nippon Mining & Metals plus those seconded by the Company to JX Nippon Environmental Services Co., Ltd. and JX Metals Smelting Co., Ltd. (Saganoseki Smelter & Refinery, Hitachi Refinery)

Employment and Work Styles

Survey scope: Companies in which JX Nippon Mining & Metals has 50% or more of their voting rights, directly or indirectly (excluding H.C. Starck Tantalum and Niobium GmbH (now TANIOBIS GmbH) Group companies)

Counting of seconded employees: Includes all employees being seconded to or from the companies subject to this survey

No. of employees (by employment status and employment contract type; as of March 31, 2020)

		Male	Female	Total
Full-time	Contracts without fixed terms	7,852	1,058	8,910
	Contracts with fixed terms	515	118	633
	Subtotal	8,367	1,176	9,543
Part-time	Contracts without fixed terms	15	33	48
	Contracts with fixed terms	59	28	87
	Subtotal	74	61	135
Total		8,441	1,237	9,678

		Japan	North America	South America	Asia	Europe	Middle East	Total
Full-time	Contracts without fixed terms	6,666	109	939	1,134	21	41	8,910
	Contracts with fixed terms	467	2	69	92	2	1	633
	Subtotal	7,133	111	1,008	1,226	23	42	9,543
Part-time	Contracts without fixed terms	47	0	0	0	1	0	48
	Contracts with fixed terms	85	0	2	0	0	0	87
	Subtotal	132	0	2	0	1	0	135
Total		7,265	111	1,010	1,226	24	42	9,678

No. of employees (by region; as of March 31, 2020)

	Japan	North America	South America	Asia	Europe	Middle East	Total
Male	6,512	85	930	855	17	42	8,441
Female	753	26	80	371	7	0	1,237
Total	7,265	111	1,010	1,226	24	42	9,678

No. of newly hired employees (April 1, 2019 to March 31, 2020)

	Male	Female	Total	Age 29 or younger	Age 30 to 49	Age 50 or older	Total
New hires	607	120	727	305	342	80	727
Percent of total employee count as of March 31, 2020	7%	10%	8%	23%	6%	3%	8%

	Japan	North America	South America	Asia	Europe	Middle East	Total
New hires	440	10	123	154	0	0	727
Percent of total employee count as of March 31, 2020	6%	9%	12%	13%	0%	0%	8%

No. of employees ending employment (April 1, 2019 to March 31, 2020)

	Male	Female	Total	Age 29 or younger	Age 30 to 49	Age 50 or older	Total
Retiring employees	617	90	707	196	343	168	707
Percent of total employee count as of March 31, 2020	7%	7%	7%	15%	6%	7%	7%

	Japan	North America	South America	Asia	Europe	Middle East	Total
Retiring employees	402	11	123	170	0	1	707
Percent of total employee count as of March 31, 2020	6%	10%	12%	14%	0%	2%	7%

Membership in labor unions (as of March 31, 2020)

	Male	Female	Total	Age 29 or younger	Age 30 to 49	Age 50 or older	Total
No. of union members	5,401	687	6,088	1,001	4,015	1,072	6,088
Membership rate	64%	56%	63%	76%	68%	43%	63%

Strikes or lockouts lasting more than one week: None

Diversity

Representation of Women in the Workforce (as of March 31, 2020)

No. of female employees (total of all Group companies)	1,237
Percentage of female in managerial positions (supervisor class and above)	27.5%
No. of female employees (JX Nippon Mining & Metals)	302
Percentage of female in managerial positions (supervisor class and above)	34.4%

Use of childcare leave in fiscal 2019 (JX Nippon Mining & Metals)

	Male	Female	Total
No. of employees using leave	9	7	16
No. of employees eligible to use leave*	114	7	121
Usage rate (rounded to nearest percent)	8%	100%	13%

* Male: Employees with a child born within the fiscal year

Female: Employees whose post-childbirth leave ended during the fiscal year and who can take childcare leave

Retention rate after return from childcare leave (Percentage of those still employed 12 months after returning from leave) (JX Nippon Mining & Metals)

	Male	Female	Total
No. of employees who returned to work from childcare leave during fiscal 2018	2	5	7
No. of employees still employed 12 months after returning to work	2	5	7
Percentage	100%	100%	100%

Rate of return to work after childcare leave (JX Nippon Mining & Metals)

	Male	Female	Total
No. of employees who returned to work from childcare leave during fiscal 2019	8	10	18
No. of employees scheduled to return to work	8	10	18
Percentage	100%	100%	100%

Status of rehiring in fiscal 2019 (JX Nippon Mining & Metals)

No. of age-limited retirees	23
No. of these rehired	20
Rehiring rate (%)	87%

Persons with disabilities as a percentage of the workforce in fiscal 2019 (JX Nippon Mining & Metals)

Percentage of employees with disabilities (statutory minimum: 2.2%)	2.4%
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