

Environmental Data

This report contains consolidated data (Mitsui O.S.K. Lines, Ltd. and MOL Group consolidated subsidiaries) and non-consolidated data (Mitsui O.S.K. Lines, Ltd. only) as of the end of each FY.

■ Energy Consumption

Past results have been retroactively revised due to an increase in consolidated subsidiaries.

	FY2019 (target base year)	FY2021	FY2022	FY2023	FY2024	Scope
Fuel oil *1 (thousand tons)	3,449	3,048	3,035	3,057	2,927	Mitsui O.S.K. Lines, Ltd., MOL Group consolidated subsidiaries in Japan and overseas (cover rate based on consolidated sales :97%)
Marine Diesel oil *1 (thousand tons)	281	300	264	285	274	
Diesel oil (K liters)	6,572	6,944	6,621	12,347	12,850	
LNG (thousand tons)	37	19	47	22	73	
Bio-fuel (thousand tons)	-	-	9	14	20	
Electricity (MWh)	86,924	80,475	77,604	80,067	92,961	
	Total renewable energy used *3	237	3,532	39,983	44,685	
	Renewable energy used rate (%)	0.3	4.4	51.5	55.8	
Municipal gas (thousand m3)	1,648	1,618	1,663	1,456	2,219	
Total energy consumption *2 (thousand GJ)	166,289	152,480	150,525	153,340	144,331	

*1 Used mainly for vessel fuel.
*2 The energy equivalent of heat originated from fuel oil, diesel oil, bio-fuel, electricity, municipal gas and other energy consumed.
*3 Mainly due to introduction of renewable energy to offices.

■ Greenhouse Gas Emissions

Organizational boundary for GHG data consolidation is operational control under the control approach.
Past results have been retroactively revised due to an increase in consolidated subsidiaries and updates to emission factors.

	FY2019 (target base year)	FY2021	FY2022	FY2023	FY2024	Scope
Scope1 (tons) *1	11,990,137	10,740,429	10,858,677	10,779,837	10,428,320	Mitsui O.S.K. Lines, Ltd., MOL Group consolidated subsidiaries in Japan and overseas (cover rate based on consolidated sales :97%)
Vessels	11,968,137	10,717,357	10,836,339	10,710,402	10,388,684	
Others	22,000	23,072	22,338	69,435	39,636	
Scope2 (tons) *2	45,116	39,018	37,224	41,405	43,154	
Market-based	-	35,887	19,483	18,104	18,857	
Scope3 (tons) *3	8,666,265	6,968,654	7,340,812	7,520,128	8,408,714	
Category1 Purchased goods and services	59,555	56,369	65,623	78,359	100,215	
Category2 Capital goods	746,493	522,335	1,231,836	1,215,232	1,574,543	
Category3 Fuel- and energy related activities (not included in scope 1 or scope 2)	2,583,344	2,309,736	2,343,589	2,307,820	2,256,678	
Category5 Waste generated in operations	1,847	2,518	2,153	3,499	2,250	
Category6 Business travel	8,091	2,118	9,215	11,712	1,277	
Category7 Employee commuting	852	512	616	1,025	1,091	
Category11 Use of sold products	799,765	442,479	550,836	494,710	668,477	
Category12 End-of-life treatment of sold products	0	0	1,796	0	0	
Category13 Downstream leased assets	26,138	21,671	11,921	11,062	11,513	
Category15 Investments	4,440,180	3,610,916	3,123,227	3,396,709	3,792,670	
Scope1+2 (tons)	12,035,253	10,776,316	10,878,160	10,797,941	10,447,177	
Scope1+2+3 (tons)	20,701,518	17,744,969	18,218,972	18,318,069	18,855,891	

*1 Scope1: CO2 emissions originating mainly from the combustion of marine fuel.
*2 Scope2: CO2 emissions originating mainly from electricity consumption.
*3 Scope3: GHG emissions originating mainly from when the capital goods and/or ship's stores are produced, fuels the vessels used are generated etc.
Due to the commencement of GHG emissions calculations for equity-method affiliates, including OCEAN NETWORK EXPRESS PTE. LTD., under Category 15 (based on the equity share approach), figures for FY2019 through FY2023 have been retroactively revised.

■ GHG Emissions from Biofuel used by Ships

	FY2021	FY2022	FY2023	FY2024	Scope
Biofuel "Well-to-Wake" (tons)	-	-	8,871.00	12,349	Mitsui O.S.K. Lines, Ltd., major ocean-going vessels MOL Group subsidiaries in Japan and overseas

【Third-party Verification of GHG Emission Data】

MOL has acquired third-party verification by Class NK to ensure the fairness, accuracy, and transparency of GHG emission data included in this report.
The verification was conducted based on ISO14064-3:2006, ISO14064-1:2006 and GHG protocols.

<Verification Target>

Scope1(Direct emissions), Scope2(Energy indirect emissions), Scope3(Other indirect emissions from Applicant's value chain), GHG Emissions from Biofuel used by Ships, and Energy Consumption.

■ GHG Emissions Intensity

	FY2019 (target base year)	FY2021	FY2022	FY2023	FY2024	Scope
CO2 emissions per ton-mile (g/ton-mile) Standard method	12.12	11.68	11.59	11.25	10.95	Mitsui O.S.K. Lines, Ltd., major ocean-going vessels MOL Group subsidiaries in Japan and overseas

*Due to the change in the emission factor, we have retroactively revised the results from fiscal 2019 to fiscal 2022.

[*Please refer to P.45 of Environmental Vision 2.2 for definitions of the standard methods.](#)

*The greenhouse gas emissions intensity information presented here reflects calculations that account for the allocation of low-emission transport activity to selected customers.

The emission intensity presented here is therefore not appropriate for use in customer-specific greenhouse gas emissions calculations.

【Third-party Verification of GHG Emissions Intensity Data】

MOL has acquired third-party verification by Class NK to ensure the fairness, accuracy, and transparency of GHG emissions intensity data included in this report.

■ SOx Emissions and Emissions Intensity

Past results have been retroactively revised due to an increase in consolidated subsidiaries.

	FY2020 (target base year)	FY2021	FY2022	FY2023	FY2024	Scope
SOx emissions (tons)	24,251	29,075	29,067	28,372	26,699	Mitsui O.S.K. Lines, Ltd., MOL Group vessel operating subsidiaries in Japan and overseas (cover rate based on consolidated sales :81%)
SOx emissions per ton-mile (g/ton-mile)	0.0223	0.0252	0.0241	0.0235	0.0224	Mitsui O.S.K. Lines, Ltd., major ocean-going vessels MOL Group subsidiaries in Japan and overseas

【Third-party Verification of SOx Emissions Data】

MOL has acquired third-party verification by Class NK to ensure the fairness, accuracy, and transparency of SOx emissions data included in this report.

■ NOx Emissions and Emissions Intensity

	FY2019 (emissions intensity base year)	FY2021	FY2022	FY2023	FY2024	Scope
NOx emissions (tons)	271,704	230,911	230,609	214,527	221,545	Mitsui O.S.K. Lines, Ltd., MOL Group vessel operating subsidiaries in Japan and overseas (cover rate based on consolidated sales :81%)
NOx emissions per ton-mile (g/ton-mile)	0.25	0.22	0.21	0.20	0.19	Mitsui O.S.K. Lines, Ltd., major ocean-going vessels MOL Group subsidiaries in Japan and overseas

■ Other Resources

	FY2020	FY2021	FY2022	FY2023	FY2024	Scope
Total waste (tons)*1	2,478	2,905	3,531	2,909	4,085	Mitsui O.S.K. Lines, Ltd., MOL Group consolidated subsidiaries in Japan and overseas (cover rate based on consolidated sales:97%)
	Recyclable	1,323	1,340	1,825	1,526	
	Non-recyclable	1,155	1,565	1,706	1,382	
Recycling ratio (%)	53.4	46.1	51.7	52.5	46.6	
Hazardous Waste Generation (tons)*2	15.01	8.86	0.57	0.00	0.00	Mitsui O.S.K. Lines, Ltd., MOL Group consolidated subsidiaries in Japan (cover rate based on consolidated sales:53%)
Total ship recycling (tons)	75,007	0	0	7,996	8,168	Mitsui O.S.K. Lines, Ltd.
Total water intake (m3)*3	410,230	403,406	632,754	468,204	487,313	Mitsui O.S.K. Lines, Ltd., MOL Group consolidated subsidiaries in Japan and overseas (cover rate based on consolidated sales :97%)
	Tap water	410,230	403,406	632,754	468,204	
	River water	-	-	-	-	
	Seawater (cyclic usage)	-	-	-	-	
Total wastewater (m3)	410,230	z	632,754	468,204	487,313	

*1 The total of waste from offices etc.

*2 Total amount of PCB-containing equipment disposed of.

*3 The volume of water used in offices. Most of the water used in vessels is made from seawater and recycled.
The increase in the number from previous year is due to coverage increase.

■ Environment Investment Amount

		FY2021	FY2022	FY2023	FY2024	Scope
Environment Investment Amount (billion yen)		119.4	206.6	259.5	3,479	Mitsui O.S.K. Lines, Ltd., MOL Group consolidated subsidiaries in Japan and overseas (cover rate based on consolidated sales :100%)
	Reduction of our Group’s GHG Emissions*1	22.4	38.0	73.9	1,082	
	Low/Decarbonization Energy Business*2	97.0	168.6	185.7	2,397	

*1 Investment in the development and ordering LNG-fueled bulkers, PCCs, etc.
Zero emission vessel to reduce emissions of GHG in its own operations.
This corresponds to the R&D cost and the business area costs in Environmental Accounting Guidelines, the Ministry of the Environment.

*2 Investment in the development of LNG carriers, LPG/Ammonia carriers, Wind Power business and its associated business to contribute to reduce GHG emissions in society.

■ Violations of Environmental Laws and Regulations

		FY2021	FY2022	FY2023	FY2024	Scope
Violations of environmental laws and regulations	Number of cases	0	0	0	0	Mitsui O.S.K. Lines, Ltd.
	Fine (million yen)	0	0	0	0	

*Violations resulting in fines exceeding US\$10,000.