

Scope and Method of Calculating Environmental Data

Item	Method of calculating amounts of energy used, amounts of disposed waste, and passenger-kilometers traveled		CO ₂ emission factor
Amount of electric power, gas, cold and hot water, heavy oil, and kerosene used	Japan	Actual measured energy usage	Emission factor by energy source based on the Act on Promotion of Global Warming Countermeasures as published by Japan's Ministry of the Environment and emission factor by electric power utility.
	Overseas	Actual measured energy usage or calculated from energy purchase costs and unit price by country as published by JETRO (*1).	
Amount of gasoline and diesel oil used	Japan	In principle, actual measured amounts of gasoline and diesel oil are used. When an actual measured amount of gasoline is unknown, the amount is calculated from the gasoline purchase cost and the domestic national average unit price as published in a survey of gas station retail prices conducted by Japan's Agency for Natural Resources and Energy.	For overseas electric power, emission factor by country published by IEA (*2).
	Overseas	In principle, the amount used is calculated from gasoline purchase costs and unit price by country as published by JETRO. When the cost of gasoline is unknown, it is calculated from the amount of gasoline used per car and the number of cars at overseas sites, or the amount of gasoline used per person at overseas sites and the number of employees overseas.	
Total amount of waste	Japan	The percentage of the actual measured amount of general waste disposed from Company-owned buildings is 88.7%. When an actual amount is unknown, it is estimated from the cost of waste disposal and the unit cost. The amount of general waste disposed from non-Company-owned buildings is calculated from the amount of disposed general waste per person in Company-owned buildings and the number of employees in non-Company-owned buildings. The amount of disposed industrial waste is the actual measured amount.	
	Overseas	Calculated from the amount of disposed general waste per person in Company-owned buildings in Japan and the number of employees overseas.	
Amount of recycled waste	Consolidated	The actual measured amount of recycled waste	
Amount of disposed waste	Consolidated	Total amount of waste minus actual measured amount of recycled waste	
Amount of water used	Japan	The percentage of the actual measured amount of water used in Company-owned buildings is 81.0%. The amount of water used in non-Company-owned buildings is calculated from the amount of water used per person in Company-owned buildings and the number of employees in non-Company-owned buildings.	
	Overseas	Calculated from water use per person in Company-owned buildings in Japan and the number of employees overseas	
Business Japan travel (by plane)	Japan	Calculated from domestic and international air travel expenses estimated from domestic and international business travel expenses (assuming that 10% or 20% of	
	Overseas		

		domestic business travel expenses and 50% of international business travel expenses are air travel expenses), emissions unit values per amount of transportation costs incurred as published by Japan's Ministry of the Environment, and emissions unit value per thousand passenger-kilometers traveled by type of transportation.	
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Organizational boundary: MS&AD Insurance Group Holdings, Inc. and its consolidated subsidiaries.

*1 JETRO: Japan External Trade Organization

*2 IEA: International Energy Agency

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Category	Subject	Calculation method	Emission source unit
Capital goods	Consolidated	Facility investment amount x emission source unit per price of capital goods	The Ministry of the Environment's database*3 [6] emission source units per price of capital goods (financial/insurance)
Fuel- and energy-related activities (not included in scope 1 or scope 2)	Consolidated	Usage amount of fuel and energy Usage amount x emission source unit	①The Ministry of the Environment's database*3 [7] emission source units per usage of electricity and heat ②IDEA DB *4 emission source units per amount of fuel
Waste generated in operation	Consolidated	Amount of recycled industrial waste, incineration processing, and direct landfill processing x waster type/emission source unit by processing method	The Ministry of the Environment's database*3 [8] emission source units by waste type / processing method (including waste transportation), [9] emission source units by waste type (including waste transportation)
Business travel (by airplane)	Consolidated	○Cost of air flight Cost of air flight × Emission source unit per transportation expenses	The Ministry of the Environment's database*3 [11] Emission source unit per transportation expenses
Employee commuting	Major Domestic consolidated subsidiaries	○commutation allowance commutation allowance × Emission source unit per transportation expenses	The Ministry of the Environment's database*3 [11] Emission source unit per transportation expenses
Lease property	Consolidated	○Electricity and gas used in the lease property • energy and gas consumption amount × Emission source unit per consumption amount for electricity and gas	Emission factor by energy source based on the Act on Promotion of Global Warming Countermeasures as published by Japan's Ministry of the Environment

*3 : The Ministry of the Environment's emission source unit database (ver. 3.0) for calculating greenhouse gas emissions through the supply chain (March 2020)

*4 : IDEA Database (for calculating greenhouse gas emissions through the supply chain) ver.2.3 (27, Dec, 2019)