ESG Data

Environmental Data2023

☑ indicates the Japanese version of the data assured by independent practitioner, Deloitte Tohmatsu Sustainability Co., Ltd.

Boundary: Scope of data collection

		Unit	FY2022	Remarks
Number of companies covered		Companies	23	The scope of aggregate total for subsidiaries covers, in principle, the following domestic consolidated subsidiaries: Toho Gas Network Co., Ltd., Mizushima Gas Co., Ltd., Toho Liquefied Gas Co., Ltd., Toeki Kyokyu Center Co., Ltd., Toho Gas Engineering Co., Ltd., Toho Gas Techno Co., Ltd., Toho Gas Living Co., Ltd., Gas Living Mie Co., Ltd., Toho Gas Safety Life Co., Ltd., Toho Gas Customer Service Co. Ltd., Toeki Customer Service Co. Ltd., Toho Reinetsu Co., Ltd., Toho Gas Information System Co., Ltd., Toho Service Co., Ltd., Toho Real Estate Co., Ltd., Toho LNG Shipping Co., Ltd., Waseda Gas Co., Ltd., Yokkaichi Air Conditioning Engineering Co.,Ltd.,Yamasa Sohgyou Co., Ltd., Yamasa yu-land Ltd., Inuyama Gas Service Co., Ltd., Sirius SolarJapan 63 GK Overseas consolidated subsidiaries are not included in the calculation as they have small environmental impact and are difficult to acquire quantitative data. Scope of coverage includes Inuyama Gas Service Co., Ltd., Minori Gas Co., Ltd., and Sugiyama, Ltd. for only the following items: 1. Raw Materials Usage and Sales Amount of Key Products: "Resources for LPG - LPG - Subsidiaries" and "LPG sales -Subsidiaries" 3. Emissions from Procurement and Customer Use: "Greenhouse gases (CO_2 equivalent) from procurement - LPG - Subsidiaries" and "CO_2 emissions from customer use - LPG - Subsidiaries" (As of end of March 2023)
Scope of coverage with respect to total CO_2 emissions amounts (coverage rate)	Toho Gas	%	100	
	Subsidiaries (domestic)	%	100	
	Subsidiaries (overseas)	%	0	

1. Raw Materials Usage and Sales Amount of Key Products

				Unit	FY2018	FY2019	FY2020	FY2021	FY2022
City gas raw materials *1	LNG	Total		Thousand tonnes	3,050	2,977	2,834	2,827	2,664 ☑
		Toho Gas			3,005	2,932	2,791	2,783	2,617 ☑
		Subsidiaries			45	46	43	45	47 ☑
	LPG	Total			97	110	109	144	150 ☑
		Toho Gas			96	109	108	143	149 ☑
		Subsidiaries			0.6	0.8	0.9	0.9	1.0 ☑
Resources for LPG	LPG	Subsidiaries	*2		451	486	462	486	475 ☑
City gas sales *1		Total		Million m³	3,924	3,881	3,701	3,709	3,550 ☑
		Toho Gas			3,868	3,824	3,647	3,654	3,491 ☑
		Subsidiaries	*3		55	56	54	56	59 ☑
LPG sales		Subsidiaries	*2	Thousand tonnes	451	486	462	486	475 ☑
Electricity sales		Toho Gas		Million kWh	575	990	1,602	2,126	2,369 ☑
Heat sales		Toho Gas		Thousand GJ	393	399	359	371	375 ☑

*1 Until FY2019, calculations covered amounts accompanying sales of city gas, but from FY2020, this has been changed so that calculations cover amounts including LNG sales amounts. In keeping with this, the change has been retroactively applied to the calculations for the data for FY2019 and earlier has been, and the values have been revised.
*2 Scope of coverage includes Inuyama Gas Service Co., Ltd., Minori Gas Co., Ltd., and Sugiyama, Ltd.
*3 City gas calorific value at Subsidiaries: 46 MJ/Nm³.
Note: Numbers in table may not sum due to rounding

2. Environmental Load Due to Business Activities

(1) Energy Consumption

			Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Purchased electricity		Total *1	Thousand kWh	144,022	142,181	122,224	119,306	118,202 ☑
	Toho Gas	Total *1		124,796	120,372	107,481	104,760	101,843 ☑
		City gas plants, etc.		89,622	84,798	73,779	70,392	69,714 ☑
		District heating and cooling		20,125	21,359	19,753	19,692	20,019 ☑
		Offices, etc.		15,792	14,456	14,372	15,420	12,595 ☑
	Subsidiaries			20,185	22,764	15,621	15,894	17,736 ☑
City gas		Total	Thousand Nm³	17,321	16,721	15,655	15,068	15,850 ☑
	Toho Gas	Total		16,732	16,098	15,199	14,590	14,261 ☑
		City gas plants, etc.		1,982	2,045	1,839	1,796	1,814 ☑
		District heating and cooling		10,082	10,421	9,258	9,090	8,754 ☑
		Offices, etc.		4,669	3,632	4,102	3,704	3,692 ☑
	Subsidiaries			589	623	457	477	1,589 ☑
Vehicular fuel		Total	GJ	107,296	127,231	122,945	115,311	109,030 ☑
	Toho Gas			27,838	27,183	21,443	20,003	9,616 ☑
	Subsidiaries			79,459	100,048	101,501	95,308	99,414 ☑
Other energy		Total *1		461,152	391,335	578,475	1,009,628	846,853 ☑
	Toho Gas			442,696	357,128	545,136	984,189	829,658 ☑
	Subsidiaries			50,507	66,418	63,287	64,085	63,889 ☑
Amount of energy consumption – total		Total *1		1,901,877	1,818,503	1,879,030	2,275,978	2,146,317
	Toho Gas			1,672,740	1,542,042	1,637,455	2,037,893	1,847,637
	Subsidiaries			229,137	276,461	241,575	238,085	298,680

(2) Emissions into Atmosphere

			Unit	FY2018	FY2019	FY2020	FY2021	FY2022
CO_2 emissions		Total *1	tonnes-CO_2	145,527	138,890	127,872	140,514	134,476 ☑
	Toho Gas	Total *1		127,106	117,631	111,400	125,844	116,795 ☑
		City gas plants, etc.		68,830	59,940	61,176	79,169	71,411 ☑
		District heating and cooling		35,792	39,158	32,772	30,148	31,070 ☑
		Offices, etc.		23,034	18,722	17,674	16,887	14,552 ☑
	Subsidiaries			20,644	23,436	18,456	16,902	20,240 ☑
Methane (CH_4) emissions *2	Toho Gas	City gas plants, etc.(manufacturing facilities)	tonnes-CO_2e	184	315	233	237	253 ☑
	Subsidiaries	Pipeline construction, etc.		284	4,451	175	654	1,360
Fluorocarbons (HCFCs and HFCs) emissions *3	Toho Gas			162	221	283	974	340 ☑
NOx emissions	Toho Gas		tonnes	32	41	40	44	35 ☑
SOx emissions		Total		0	0	0	0	0 ☑
	Toho Gas			0	0	0	0	0 ☑
	Subsidiaries			0	0	0	0	0 ☑
VOC	Toho Gas	Amount handled		0.0	0.2	0.2	0.2	0.1 ☑
		Amount discharged		0.0	0.2	0.2	0.2	0.1 ☑
		Amount moved		0	0	0	0	0 ☑
	Subsidiaries	Amount handled		-	-	-	-	0.4 ☑
		Amount discharged		-	-	-	-	0.4 ☑
		Amount moved		-	-	-	-	0 ☑

(3) Water Withdrawal (Water Consumption)

			Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Water withdrawal (water consumption)		Total	Thousand m³	347,384	301,363	264,028	252,087	226,410
	Toho Gas	Total		347,242	301,145	263,843	251,897	226,248
		Tapwater (Municipal potable water)		450	354	363	363	374 ☑
		Industrial water		667	770	700	741	738 ☑
		Well water		0	1	3	2	2 ☑
		Seawater *4		346,125	300,020	262,777	250,792	225,134 ☑
		Surface water from rivers,ponds, and lakes		0	0	0	0	0
		Quarry water		0	0	0	0	0
		Rainwater		0	0	0	0	0
		External wastewater		0	0	0	0	0
	Subsidiaries	Total		142	218	184	189	162
		Tapwater (Municipal potable water)		133	132	117	124	122 ☑
		Industrial water		9	14	2	2	2 ☑
		Well water		0	71	65	63	39 ☑
		Seawater *4		0	0	0	0	0 ☑
		Surface water from rivers,ponds, and lakes		0	0	0	0	0
		Quarry water		0	0	0	0	0
		Rainwater		0	0	0	0	0
		External wastewater		0	0	0	0	0

(4) Discharge, Etc., to Water Systems

			Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Water discharge		Total	Thousand m³	347,194	301,176	263,869	251,934	226,248
	Toho Gas	Total		347,052	300,958	263,685	251,745	226,086
		Sewer *5		279	224	173	159	172 ☑
		River		98	91	88	94	91 ☑
		Ocean *4		346,675	300,643	263,423	251,491	225,823 ☑
		Subsurface and well water		0	0	0	0	0
		External water treatment amounts		0	0	0	0	0
	Subsidiaries	Total		142	218	184	189	162
		Sewer *5		124	198	159	166	144 ☑
		River		0	0	24	22	17 ☑
		Ocean *4		18	20	2	1	2 ☑
		Subsurface and well water		0	0	0	0	0
		External water treatment amounts		0	0	0	0	0
Beneficial usage (amount of evaporation)		Total		190	187	158	153	162
	Toho Gas	Beneficial usage (amount of evaporation)		190	187	158	153	162
	Subsidiaries	Beneficial usage (amount of evaporation)		0	0	0	0	0
COD load	Toho Gas		tonnes	0.2	0.2	0.2	0.2	0.2 ☑

(5) Waste

				Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Industrial waste	Waste generated (Included in totals: amount of hazardous waste materials generated *6)	Total		tonnes (tonnes)	36,991 (17)	37,015 (32)	43,272 (9)	40,642 (8)	38,593 ☑ (2)
		Toho Gas		tonnes	1,353	1,264	1,271	1,127	580 ☑
		Subsidiaries			35,638	35,751	42,001	39,515	38,013 ☑
	Waste reduced	Total			1,694	1,605	2,782	3,379	2,426 ☑
		Toho Gas			136	141	189	195	110 ☑
		Subsidiaries			1,558	1,464	2,593	3,184	2,316 ☑
	Waste recycled	Total			34,458	34,588	39,532	35,857	34,700 ☑
		Toho Gas			1,168	1,083	1,028	896	456 ☑
		Subsidiaries			33,290	33,505	38,504	34,961	34,244 ☑
	Weight reduction and recycling rate	Total		%	98	98	98	97	96 ☑
		Toho Gas			96	97	96	97	98 ☑
		Subsidiaries			98	98	98	97	96 ☑
	Final disposal waste	Total		tonnes	839	822	958	1,406	1,467 ☑
		Toho Gas			49	40	54	36	14 ☑
		Subsidiaries			790	782	904	1,370	1,453 ☑
General waste	Waste generated	Toho Gas		tonnes	521	572	550	489	465
	Waste recycled				427	462	442	398	373
	Recycling rate			%	82	81	80	81	80
	External disposal waste			tonnes	94	110	108	91	91

*1 Because portions corresponding to double counting from intra-group exchanges are excluded, figures may not add up to totals.
*2 Calculations cover the amounts of emissions in the manufacture and supply of city gas.
*3 Calculated the gases regulated by the Act on Rational Use and Appropriate Management of Fluorocarbons.
*4 Since FY2017, the amounts of water consumption and discharge include seawater.
*5 The amount of water discharged to sewers is calculated with deductions of sewer reduction and exemption amounts, which evaporated at facilities.
*6 Specially controlled industrial waste regulated by the Cabinet Order for the Enforcement of the Waste Management and Public Cleansing Act.
Notes: ・CO_2 emissions at city gas plants, etc., include the portion for the electricity business.
・Because the scope of coverage has been revised to a consolidated basis, the figures up through FY2019 include Chita Tansan Co., Ltd., but Chita Tansan is not included from FY2020 and after.
・Numbers in table may not sum due to rounding.

3.Emissions from Procurement and Customers Use

				Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Greenhouse gases (CO_2 equivalent) from procurement			Total	Ten thousand tonnes-CO_2	170	168	160	161	153 ☑
	City gas *1	Toho Gas			152	149	142	142	134 ☑
		Subsidiaries			2	2	2	2	2 ☑
	LPG	Subsidiaries	*2		15	17	16	17	16 ☑
CO_2 emissions from customer use			Total		996	996	950	959	920 ☑
	City gas *1	Toho Gas			847	838	799	801	765 ☑
		Subsidiaries			12	12	12	12	13 ☑
	LPG	Subsidiaries	*2		135	146	139	146	143 ☑

*1 Until FY2019, calculations covered amounts accompanying sales of city gas, but from FY2020, this has been changed so that calculations cover amounts including LNG sales amounts. In keeping with this, the change has been retroactively applied to the calculations for the data for FY2019 and earlier has been, and the values have been revised.
*2 Scope of coverage includes Inuyama Gas Service Co., Ltd., Minori Gas Co., Ltd., and Sugiyama, Ltd.
Note: Numbers in table may not sum due to rounding

4.Details of Greenhouse Gas Emissions (SCOPE 1, 2 and Toho Gas non-consolidated*1)

		Unit	FY2022
Greenhouse gas emissions – SCOPE 1 and 2 totals		tonnes-CO_2e	117,550 ☑
Scope1 totals		tonnes-CO_2e	73,345 ☑
	1 CO_2 emissions (energy source)	tonnes-CO_2	72,590
	2 CO_2 emissions (non-energy source)	tonnes-CO_2	0
Scope1	3 Methane (CH_4)emissions *2	tonnes-CO_2e	253
	4 N_2O emissions	tonnes-CO_2e	162
	5 Fluorocarbons (HCFCs, HFCs) *3	tonnes-CO_2e	340
	6 Perfluorocarbon (PFCs)emissions	tonnes-CO_2e	0
	7 SF_6 emissions	tonnes-CO_2e	0
	8 NF_3	tonnes-CO_2e	0
Scope2	CO_2 emissions	tonnes-CO_2	44,206 ☑

*1 The disclosure scope of this aggregate table pertains only to quantities of Toho Gas non-consolidated.
Also, the subject and calculation methods are not based on the the Act on Promotion of Global Warming Countermeasures (hereinafter referred to as the "Global Warming Act"), but adhere to the Calculation Standards for Major Environmental Data.
*2 Calculations cover the amounts of emissions in the manufacture of city gas.
*3 Calculations cover the gases covered by the Act on Rational Use and Appropriate Management of Fluorocarbons (hereinafter referred to as the "Fluorocarbon Emission Control Act").
Notes: Due to rounding of decimals, totals may not always match.

Calculation Standards for Main Environmental Data
<Business Activities of the Toho Gas Group>

Item		Calculation method
Atmosphere and water quality	CO_2 emissions	CO_2 emissions factors are as shown in the table below. Formula: CO_2 emissions[tonnes-CO_2] = (Purchased electricity, fuel consumption, purchased heat x CO_2 emission factor) [tonnes-CO_2]- (Credit) [tonnes-CO_2]
	Methane emissions	We calculated emission from manufacturing facilities at city gas plants, emission associated with pipeline constructions, and leakage emission due to breakage, etc. 1 Emission from manufacturing facilities at city gas plants Formula: Methane emission [tonnes-CO_2e] = Gas vented volume per respective facility (representative value) [m^3/vent] x Number of venting x Methane concentration [%] x 1/100 [1%] x 16 [g] / 22.4 [L] x 1,000 [L/m^3] x 1/1,000,000 [tonnes/g] x Global warming potential [tonnes-CO_2e/tonne] 2 Emission associated with pipeline constructions Formula: Methane emission [tonnes-CO_2e] = Number of annual construction projects [projects/year] x Mean pipeline volume [m^3/project] x 50 [%]* x Methane concentration [%] X 1/100 [1%] x 16 [g] / 22.4 [L] x 1,000 [L/m3] x 1/1,000,000 [tonnes/g] x Global warming potential [tonnes-CO_2e/tonne] * It is assumed that the gas of 50% of the pipeline volume is concomitantly released to the air during gas replacement related to construction. 3 Leakage emission due to leakage, etc. Formula: Methane emission [tonnes-CO_2e] = Number of leakage incidents [incidents/year] x Leakage amount per unit time [m^3/min] x Leakage time per incident [min/incident] x Methane concentration [%] X 1/100 [1%] x 16 [g] / 22.4 [L] x 1,000 [L/m^3] x 1/1,000,000[tonnes/g] x Global warming potential [tonnes-CO_2e/tonne] * The global warming potential (GWP) is referenced from the Global Warming Act.
	Fluorocarbons emissions	We calculated leaked gases from equipment regulated by the Fluorocarbon Emission Control Act. Formula: Leaked fluorocarbons [tonnes-CO_2e] = (Fluorocarbon filled [tonnes] - Recovered fluorocarbon [tonnes]) x Global warming potential [tonnes-CO_2e/tonne] * The global warming potential (GWP) is referenced from the Global Warming Act.
	NOx emissions	The scope of coverage is production equipment in facilities regulated by the Air Pollution Control Act (excluding emergency facilities). Formula: Emissions [tonnes] = Gas emissions at target facilities [m^3] x NOx concentration [ppm] x 1/1,000,000 [1/ppm] x 46 [g] / 22.4 [L] x 1/1,000,000 [tonnes/g] x 1,000 [L/m^3]
	SOx emissions	The scope of coverage is gasoline and diesel oil consumed by vehicles and plant equipment. Formula: Emissions [tonnes] = Fuel consumption [kL] x Weight density [tonnes/kL] x Sulfur content rate [ppm] x 64 [g] / 32 [g] x 1/1,000,000 [1/ppm]
	N_2O	The scope of coverage is usage of fuel in facilities and machinery for fuel combustion. Formula: N_2O emissions (tonnes-CO_2e) = Fuel usage (thousand Nm^3) × Unit heat value (GJ/thousand Nm^3) × Emission factor per unit of equipment (tonnes-N_2O/GJ) × Global warming potential (tonnes-CO_2e/tonnes-N_2O) Note: The global warming potential (GWP) is referenced from the Global Warming Act.
	SF_6	We calculated amounts of leakage from SF_6-filled transformers and other such equipment. Formula: Leakage amount (tonnes-CO_2e) = (SF_6 filled (tonnes) - SF_6 recovered (tonnes)) × Global warming potential (tonnes-CO_2e/tonnes) Note: The global warming potential (GWP) is referenced from the Global Warming Act.
	VOC	The scope of coverage is fully painted LNG tanks and gas holders of a size based on the Pollutant Release and transfer Register system defined by the Act on Confirmation, Etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management thereof. Formula: Emissions [tonnes] = Paint consumption [tonnes] x VOC content rate [%]
	COD load	The scope of coverage is water quality facilities subject to laws, regulations, and agreements regulating production facilities. Formula: COD load [tonnes]= Water discharged from target facilities [m^3] x COD concentration [mg/L] x 1,000 [L/m^3] x 1/1,000,000,000 [tonnes/mg]
	Water withdrawal (water consumption)	・Total amount of tapwater, industrial water, and well water withdrawn ・Seawater withdrawn: total amount of withdrawal by gasification seawater pumps in city gas plants. Formula: Seawater withdrawn [thousand m^3] = Pump rated capacity [m^3/h] x Operation time [h] x 1/1,000 [thousand m^3/m^3]
	Water discharge	Water discharge is calculated by subtracting the amount of sewer reduction and exemption from withdrawn water. Formula: Water discharge = Water withdrawal - Sewer reduction and exemption
	Beneficial usage (amount of evaporation)	As the beneficial usage, the scalable loss of water (the amount of sewer reduction and exemption) from regional Energy Centers is used. Basis: Notification of sewer reduction and exemption amount

Calculation Standards for Main Environmental Data

<Business Activities of the Toho Gas Group>

Item		Calculation method
Waste	Waste generated	・Amount generated based on manifests or amount measured by waste processor
	Waste reduced	・Reduction of water and so on as a result of incineration, dehydration, and other processes at intermediate processing facilities Reported values from industrial waste processors are used as reduction rates for sludge and rubble (asphalt, concrete, and the like from gas pipeline construction) of Toho Gas, whereas figures from the Japan Environmental Management Association for Industry "Recycle Data Book 2022" are used as reduction rates of other materials. Formula: Waste reduced = Waste generated x Reduction rate
	Waste recycled	・Waste recycled for reuse as raw materials through sorting and so on at intermediate processing facilities Reported values from industrial waste processors are used as recycling rates for sludge and rubble (asphalt, concrete, and the like from gas pipeline construction) of Toho Gas, whereas figures from the Japan Environmental Management Association for Industry "Recycle Data Book2022" are used as recycling rates of other materials. Formula: Waste recycled = Waste generated x Recycling rate
	Weight reduction and recycling rate	・the ratio of the reduced or the recycled at intermediate processing facilities to the generated Formula: Weight reduction and recycling rate = (Waste reduced + Waste recycled) / Waste generated
	Final disposal waste	Formula: Final disposal waste = Waste generated - (Waste reduced + Waste recycled)

<Emissions from Procurement and Customers Use>

Item			Calculation method
Atmosphere	Greenhouse gas emissions	Procurement	Formula: Greenhouse gas emissions = Raw materials usage of LNG (including sales in liquid) and LPG x Greenhouse gas emission factor* *Source: LNG: Japan Gas Association website LPG: Calculated based on “Future Forecast for Life Cycle Greenhouse Gas Emissions of LNG and City Gas 13A” from the Journal of the 26th Annual Meeting of the Japan Society of Energy and Resources (Vol. 28-2, published in 2007) (gross calorific value basis)
	CO_2 emissions	Customer use	CO_2 emissions factors are as shown in the table below Formula: CO_2 emissions = City gas sales & LNG sales & LPG sales x CO_2 emissions factors

CO_2 Emission Factors

		Unit	FY2018	FY2019	FY2020	FY2021	FY2022	
Purchased electricity		tonnes-CO_2/ thousand kWh	0.472	0.452	0.426	0.379	0.388	Source: ・Figures by electric power company released pursuant to ministerial ordinance under the Global Warming Act. ・In this table, "Chubu Electric Power Miraiz Co., Inc." is listed as an example. ・From FY2018, "adjusted emission factors" are used. ・Toho Gas electricity is considered as self consignment and uses base emission factor from FY2021.
City gas		tonnes-CO_2/ thousand Nm³	2.29	2.29	2.29	2.29	2.29	・Calorific value calculated by the Toho Gas's city gas(13A) representative composition(0℃, 1 atmosphere)
Other fuels	LPG (gaseous)	tonnes-CO_2/ thousand m³	6.12	6.12	6.12	6.12	6.12	Source: ・Values calculated by multiplying emissions factors pursuant to ministerial ordinance under the Global Warming Act by the reciprocal of LPG's weight density
	LPG (liquid)	tonnes-CO_2/ thousand ℓ	1.71	1.71	1.71	1.71	1.71	
	LPG	tonnes-CO_2/tonne	3.00	3.00	3.00	3.00	3.00	Source: ・Emissions factors pursuant to ministerial ordinance under the Global Warming Act
	LNG	tonnes-CO_2/tonne	2.70	2.70	2.70	2.70	2.70	
	Natural gas	tonnes-CO_2/ thousand Nm³	2.22	2.22	2.22	2.22	2.22	
	Diesel oil	tonnes-CO_2/ thousand ℓ	2.58	2.58	2.58	2.58	2.58	
	Gasoline		2.32	2.32	2.32	2.32	2.32	
Purchased heat	Steam (excluding industrial steam), hot water, and cold water	tonnes-CO_2/GJ	0.057	0.057	0.057	0.057	0.057	

For Reference: Appropriate Evaluations of Reductions of CO_2 Due to Reduced Use of Electricity
The amounts of CO_2 that can be reduced by reducing the amount of electricity consumption must be evaluated depending on the power sources (marginal power sources) affected by reduction approaches.
For more information, please refer to the Japan Gas Association website (in Japanese).
https://www.gas.or.jp/kankyo/taisaku/denki/

Unit Calorific Values

		Unit	FY2018	FY2019	FY2020	FY2021	FY2022	
City gas		GJ/thousand Nm³	45.0	45.0	45.0	45.0	45.0	Toho Gas's city gas calorific value (0℃, 1 atmosphere) total calorific value: 45 GJ/thousand Nm^3
Other fuels	LPG	GJ/tonne	50.8	50.8	50.8	50.8	50.8	Source: Unit calorific value pursuant to ministerial ordinance under the Global Warming Act
	LNG	GJ/tonne	54.6	54.6	54.6	54.6	54.6	
	Natural gas	GJ/thousand Nm³	43.5	43.5	43.5	43.5	43.5	
	Diesel oil	GJ/thousand ℓ	37.7	37.7	37.7	37.7	37.7	
	Gasoline	GJ/thousand ℓ	34.6	34.6	34.6	34.6	34.6	

5.Details of Greenhouse Gas Emissions (SCOPE 1,･2 and SCOPE 1, 2, 3 Totals)

				Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Greenhouse gas emissions – SCOPE 1 and 2 totals			Total *1	tonnes-CO_2e	146,223	143,951	128,633	142,451	136,595
		Toho Gas	Total *1	tonnes-CO_2e	127,800	122,689	112,158	127,762	117,550
		Subsidiaries		tonnes-CO_2e	20,646	23,439	18,458	16,904	21,604
Greenhouse gas emissions – SCOPE 1 and 2, 3 totals			Total	tonnes-CO_2e	11,854,362	11,855,945	11,291,342	11,415,355	10,941,176
Scope1	CO_2 emissions (energy source)		Total	tonnes-CO_2	65,854	62,353	70,269	94,542	83,749
		Toho Gas	Total	tonnes-CO_2	58,688	52,713	61,103	84,259	72,590
			City gas plants, etc.	tonnes-CO_2	23,838	19,527	29,103	51,640	43,462
			District heating and cooling	tonnes-CO_2	22,403	23,134	21,201	22,798	20,047
			Offices, etc.	tonnes-CO_2	12,447	10,052	10,798	9,821	9,081
		Subsidiaries		tonnes-CO_2	7,166	9,640	9,166	10,284	11,160
	Methane (CH_4)emissions *2		Total	tonnes-CO_2e	468	4,766	408	891	1,613
		Toho Gas	Total	tonnes-CO_2e	468	4,766	408	891	253
			City gas plants, etc.	tonnes-CO_2e	184	315	233	237	253
			District heating and cooling	tonnes-CO_2e	0	0	0	0	0
			Offices, etc.	tonnes-CO_2e	284	4,451	175	654	0
		Subsidiaries(pipeline construction, etc.)		tonnes-CO_2e	0	0	0	0	1,360
	Fluorocarbons (CFCs, HCFCs, HFCs) *3	Toho Gas	Total	tonnes-CO_2e	162	221	283	974	340
	Perfluorocarbon (PFCs) emissions		Total	tonnes-CO_2e	0	0	0	0	0
		Toho Gas		tonnes-CO_2e	0	0	0	0	0
		Subsidiaries		tonnes-CO_2e	0	0	0	0	0
	N_2O emissions		Total	tonnes-CO_2e	65	74	70	56	166
		Toho Gas		tonnes-CO_2e	63	71	68	53	162
		Subsidiaries		tonnes-CO_2e	2	3	2	3	4
	SF_6 emissions		Total	tonnes-CO_2e	0	0	0	16	0
		Toho Gas		tonnes-CO_2e	0	0	0	16	0
		Subsidiaries		tonnes-CO_2e	0	0	0	0	0
	Other greenhouse gas emissions		Total	tonnes-CO_2e	0	0	0	0	0
		Toho Gas		tonnes-CO_2e	0	0	0	0	0
		Subsidiaries		tonnes-CO_2e	0	0	0	0	0
Scope2	CO_2 emissions		Total *1	tonnes-CO_2	79,673	76,537	57,603	45,971	50,727
		Toho Gas	Total *1	tonnes-CO_2	68,418	64,918	50,297	41,586	44,206
			City gas plants, etc.	tonnes-CO_2	44,992	40,413	32,073	27,530	27,950
			District heating and cooling	tonnes-CO_2	13,389	16,024	11,570	7,350	11,023
			Offices, etc.	tonnes-CO_2	10,587	8,670	6,876	7,066	5,470
		Subsidiaries		tonnes-CO_2	13,478	13,796	9,290	6,618	9,080
Scope 3 *4	Greenhouse gas emissions		Total	tonnes-CO_2e	11,708,138	11,711,994	11,162,709	11,272,904	10,804,581

*1 Because portions corresponding to double counting from intra-group exchanges are excluded, figures may not add up to totals.
*2 Calculations cover the amounts of emissions in the manufacture and supply of city gas.
*3 Calculations cover the gases regulated by the Fluorocarbon Emission Control Act (Toho Gas non-consolidated). CFCs are not used.
*4 Until FY2019, calculations covered amounts accompanying sales of city gas, but from FY2020, this has been changed so that calculations cover amounts of sales of natural gas, including LNG sales amounts.
In keeping with this, the change has been retroactively applied to the calculations for the data for FY2019 and earlier has been, and the values have been revised.
Notes: CO_2 emissions at city gas plants, etc., include the portion for the electricity business.
Numbers in table may not sum due to rounding.

6.Details of Greenhouse Gas Emissions (SCOPE 3) (Totals for Toho Gas and Affiliates)

		Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Category 1 *1	Purchased goods	tonnes-CO_2e	265,839	281,283	266,910	281,525	273,355
Category 2 *1	Capital goods	tonnes-CO_2e	59,674	58,637	55,805	56,002	52,946
Category 3 *1	Fuel procurement	tonnes-CO_2e	1,117,481	1,100,501	1,047,721	1,045,024	984,638
Category 4 *1	Transportation (upstream)	tonnes-CO_2e	296,537	295,689	281,187	286,038	272,461
Category 5	Waste	tonnes-CO_2e	2,264	2,143	2,426	3,637	2,394
Category 6	Business travel	tonnes-CO_2e	754	806	809	803	790
Category 7	Commuting	tonnes-CO_2e	1,790	1,913	1,922	1,908	1,877
Category 8	Leased assets (upstream)	tonnes-CO_2e	0	0	0	0	0
Category 9	Transportation (downstream)	tonnes-CO_2e	10,665	11,462	10,896	11,467	11,140
Category 10	Product processing	tonnes-CO_2e	0	0	0	0	0
Category 11 *1	Product use	tonnes-CO_2	9,953,134	9,959,561	9,495,034	9,586,501	9,204,979
Category 12	Product disposal	tonnes-CO_2e	0	0	0	0	0
Category 13	Leased assets (downstream)	tonnes-CO_2e	0	0	0	0	0
Category 14	Franchises	tonnes-CO_2e	0	0	0	0	0
Category 15	Investments	tonnes-CO_2e	0	0	0	0	0
Other (upstream)		tonnes-CO_2e	0	0	0	0	0
Other (downstream)		tonnes-CO_2e	0	0	0	0	0
Total		tonnes-CO_2e	11,708,138	11,711,994	11,162,709	11,272,904	10,804,581

*1 Until FY2019, calculations covered amounts accompanying sales of city gas, but from FY2020, this has been changed so that calculations cover amounts including LNG sales amounts. In keeping with this, the change has been retroactively applied to the calculations for the data for FY2019 and earlier has been, and the values have been revised.

Note: No figures are disclosed for the following categories, which are unrelated to our business activities.

- Category 8 Emission amounts involving leased property and other leased assets are fundamentally covered by SCOPE 1 and 2, and so this is not applicable.
- Category 10 The main products Toho Gas sells are energy, and no processing accompanied by CO2 emissions is performed by other companies, and so this is not applicable.
- Category 12 The main products Toho Gas sells are energy, and because equipment is mainly sold by gas equipment manufacturers, no waste, residue, or the like is generated through use, and so this is not applicable.
- Category 13 The majority of emissions accompanying the use of tenant properties owned by the Toho Gas Group and Toho Gas-owned properties at customer locations are covered by SCOPE 1 and 2 or SCOPE 3 Category 11, and so this is not applicable.
- Category 14 Toho Gas has not implemented a franchise system, and so there are no CO2 emissions for which this category is applicable.
- Category 15 This category applies to investment businesses and operators that offer financial services, being chiefly private financial institutions (commercial banks, etc.) , and is not
- There are no activities applicable to other matters (upstream or downstream). There are no activities applicable to other matters (upstream or downstream).

<Sources of CO2 emissions coefficients used>

●Emissions coefficients for production, facilities, liquefaction, and overseas transportation of LNG Website of the Japan Gas Association
https://www.gas.or.jp/tokucho/

●Emissions coefficients for production, facilities, and overseas transportation of LPG
LNG and city gas 13A life-cycle greenhouse gas emission forecast from the Journal of the 26th Annual Meeting of the Japan Society of Energy and Resources
(Vol. 28-2, published in 2007)

●Emissions coefficients for domestic transportation of LPG
"Life-cycle Inventory Analysis on Fossil-derived Energy Sources in Japan"
(The 353rd Conference of the Japan Society of Energy and Resources, held in May 1999)

●Other key emissions coefficients
"Database of Emissions Unit Values for Calculation of Greenhouse Gas Emissions, Etc., by Organizations Throughout the SupplyChain (Ver. 2.3) "
by the Ministry of the Environment (March 2016)

7. Responses to Water Risks

(1) Evaluation of Water Stress

The Toho Gas Group uses water resources for various purposes, such as gasification of LNG, and is aware of the importance of the effective utilization of water.
Through evaluations using Aqueduct, which is issued by the World Resources Institute (WRI), we have confirmed that the areas where the Group's places of business are located all have low water stress.

(2) Compliance with Regulation Criteria

We comply appropriately with regulations and agreements on water, and have experienced no accidents having major environmental impact, or any legal violations.
The seawater used as a heat source for gasification of LNG at city gas plants we design manufacturing facilities to ensure the temperature difference between water intake and water discharge falls within a certain range with the aim of reducing our impact.

	Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Number of incidents of non-compliance with water quality/quantity permits, standards and regulations	Incidents	0	0	0	0	0

(3) Disclosure of Water Consumption and Discharge Amounts

We assess the amount of water used generally in the form of municipal potable water in offices, the amount of industrial water, and the amount of well water, and work to conserve water used. For discharged water, we assess the amount of water discharged at discrete discharge sites and manage the quality of water discharged in accordance with laws and regulations concerning discharge as well as ordinances of local governments.
We make no use of collected rainwater or water collected from quarries. Seawater is used as a heat source for gasification of LNG, but water extracted from seawater (fresh water) is not used.
There is no discharged water processed offsite at locations other than our own places of business (other than water discharged to sewers).
Data on amounts of water withdrawal and distributor for the past five years is available in the ESG Data, under Environmental Data: 1. Environmental Load - 2. Environmental Load Due to Business Activities, (4) Water Withdrawal (Water Usage Amounts) and (5) Discharge, Etc., to Water Systems.

8. Percentage of Sites Covered by ISO 14001*1 Certification (Non-consolidated)

	Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Percentage of Sites Covered by ISO 14001 certification *2 (on a CO_2 emissions basis)	%	54	51	55	63	61

*1 An international standard for continuous reduction of environmental load and improvement of environmental management
*2 Obtained at Chita-Midorihama Works, Chita LNG Terminal, Chita Calorific Value Adjustment Center, and Yokkaichi Works

9. Penalties and Fines Related to Environmental Legislation

In FY2021, there were no administrative dispositions due to violation of laws or regulations related to the environment.

	Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Fines related to environmental legislation	Yen	0	0	0	0	0

10. Mid- to Long-term Targets for CO2 Emissions Reduction, etc.

(1) Mid-term target

The Toho Gas Group has announced Toho Gas Group Vision and Toho Gas Group Medium-term Management Plan 2022-2025 in March 2022. We have established environmental action goals for FY2022 to FY2025 based on the Medium-term Management Plan and are promoting initiatives to contribute to reducing CO_2 emissions in the society and reducing CO_2 emission intensity in our business activities.

Goal item	Goal value	Target Scope and Category	Ratio of total amount in Scope or Category and target emissions	Set year	Base year	Target year	Emissions in base year
Amount of contribution to CO_2 reduction	-1 million tonnes	Scope 1, 2 and Scope 3 Category 1, 2, 3, 4, 5, 6, 7, 9, 11	100%	2021	2020	2025	11.29 million tonnes-CO_2
Reduction of CO_2 emissions intensity in business activities	-2% CO_2 emission intensity/year	Scope1,2	99%	2021	2021	2025	0.141 million tonnes-CO_2

(2) Long-term target

The Group has established a FY2030 target for the amount of contribution to CO2 reduction and announced the Toho Gas Group 2050 Carbon Neutrality Initiative in July 2021.

Goal item	Goal value	Target Scope and Category	Ratio of total amount in Scope or Category and target emissions	Set year	Base year	Target year	Emissions in base year
Amount of contribution to CO_2 reduction	-3 million tonnes	Scope 1, 2 and Scope 3 Category 1, 2, 3, 4, 11	100%	2021	2020	2030	11.29 million tonnes-CO_2

Independent Practitioner's Assurance of Environmental Data

Toho Gas Group has received independent practitioner's assurance from Deloitte Tohmatsu Sustainability Co., Ltd. in order to increase the reliability of environmental data. Since first acquiring independent practitioner's assurance in FY2002, Toho Gas has worked to improve the reliability of environmental data, expanding the coverage of the value chain and the scope of data included.

【Assurance Scope】

FY2022 environmental data includes greenhouse gases (CO_2 equivalent), energy consumption (electricity, gas, and other fuels), waste,water consumption and discharge, raw materials usage (LNG and LPG), sales amount (city gas, LPG, heat, and electricity), etc.
The Japanese version of the data marked with ☑ in the ESG Data - Environmental Data 2023 indicates the data is assuredby an independent practitioner.

Independent Practitioner's Assurance Report

Deloitte.
デロイト トーマツ

(TRANSLATION)

Independent Practitioner's Assurance Report

July 31, 2023

Mr. Nobuyuki Masuda,
Representative Director, President,
TOHO GAS Co., Ltd.

Tomoharu Hase
Representative Director
Deloitte Tohmatsu Sustainability Co., Ltd.
3-2-3, Marunouchi, Chiyoda-ku, Tokyo

We have undertaken a limited assurance engagement of the environmental data indicated with ☑ for the year ended March 31, 2023 (the "Environmental Data") included in the "ESG Data – Environmental Data 2023" (the "Report") of TOHO GAS Co., Ltd. (the "Company").

The Company's Responsibility
The Company is responsible for the preparation of the Environmental Data in accordance with the calculation and reporting standard adopted by the Company (Calculation Standards for Main Environmental Data indicated in the Report). Greenhouse gas quantification is subject to inherent uncertainty for reasons such as incomplete scientific knowledge used to determine emissions factors and numerical data needed to combine emissions of different gases.

Our Independence and Quality Control
We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. We apply International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our Responsibility
Our responsibility is to express a limited assurance conclusion on the Environmental Data based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements ("ISAE") 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board ("IAASB"), ISAE 3410, *Assurance Engagements on Greenhouse Gas Statements*, issued by the IAASB and *the Practical Guideline for the Assurance of Sustainability Information*, issued by the Japanese Association of Assurance Organizations for Sustainability Information.
The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. These procedures also included the following:

- Evaluating whether the Company's methods for estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or reperforming the estimates.
- Performing interviews of responsible persons and inspecting documentary evidence to assess the completeness of the data, data collection methods, source data and relevant assumptions applicable to the sites.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

Limited Assurance Conclusion
Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Environmental Data is not prepared, in all material respects, in accordance with the calculation and reporting standard adopted by the Company.

The above represents a translation, for convenience only, of the original Independent Practitioner's Assurance report issued in the Japanese language.

Member of
Deloitte Touche Tohmatsu Limited