

Sustainable Performance – Information on Environment

The environmental information in this report is aligned with the GRI Standards 2021 reporting guidelines and has been verified for accuracy by SGS (Thailand) Limited. It covers GRI 302-1 (2016) Energy consumption within the organization, GRI 303-3 (2018) Water withdrawal, GRI 303-4 (2018) Water discharge, GRI 305-1 (2016) Direct (Scope 1) GHG emissions, GRI 305-2 (2016) Energy indirect (Scope 2) GHG emissions, GRI 305-3 (2016) Other indirect (Scope 3) GHG emissions, GRI 306-3 (2020) Waste generated, GRI 306-4 (2020) Waste diverted from disposal, and GRI 306-5 (2020) Waste directed to disposal.

Additionally, the following details are important to highlight:

1. In 2021, data were gathered from November 1 of the preceding year to October 31 of the reporting year. Starting in 2022, the data collection period was adjusted to span from January 1 to December 31 of the reporting year.
2. The abbreviation "NA" refers to "Not Available" or indicates that no data was collected, while "NR" stands for "Not Relevant."
3. The scope of data collection for companies has been expanded as follows:
 - In 2021, two new companies were added: Betong Green Power Co., Ltd. and Productivity Plus Co., Ltd. (Saraburi).
 - In 2022, ten new companies were added: Green Pharmahol Co., Ltd., Bangkok Alcohol Industrial Co., Ltd., Kamphaengphet Green Energy Co., Ltd., Apcon Renewable Energy Co., Ltd., MP Apcon Operations Co., Ltd., Panel Design Lab Co., Ltd., Fair Fast Co., Ltd., Thai Environmental and Energy Development Co., Ltd., Health Innotech Co., Ltd., and Eto-Huay Kasain Valley Co., Ltd.
 - In 2023, nine new companies were added: Prize of Wood Green Energy Co., Ltd., Safe Biomass Co., Ltd., C.A.B. Woodchip Co., Ltd., Rungtiva Biomass Co., Ltd., Saraburi Solar Co., Ltd., Sawasdee Energy Holding Co., Ltd., Steem Inc Co., Ltd., Wood Solution Co., Ltd., and Khonkaen Innovation Center Co., Ltd.
 - In 2024, nine new companies were added: Mitrphol Sugar Co., Ltd. (Kasetsombun), Kasetsombun Bio-Power Co., Ltd., Deeyiam Solar Power Limited, BS Green Energy Co., Ltd., TPCP Power 1 Co., Ltd., TPCP Power 2 Co., Ltd., TPCP Power 5 Co., Ltd., Logis Link Co., Ltd., and Mitr Phol Biotech Co., Ltd.
4. The business group classification of companies has been adjusted as follows:
 - From 2020 to 2022, Ratchasima Green Starch Co., Ltd. was categorized as part of the Energy Business. Starting in 2023, it was reclassified under Other Business.

Volume of Materials Used in Production Processes of Mitr Phol Group

Business Unit	Data	Unit	2021	2022	2023	2024
GRI 301-1 (2016) Volume of Materials Used						
Mitr Phol Group	Renewable materials used	Tons	16,704,942	11,257,033	22,126,869.33	22,968,283.02
	Non-renewable materials used	Tons	336,239	456,931	294,107.06	440,401.04
	Total materials used	Tons	17,041,181	11,713,964	22,420,976.40	23,408,684.06
Farming business	Renewable materials used	Tons	61,012	277,824	1,198.14	27,670.66
	Non-renewable materials used	Tons	33	227	9.94	6,545.77
	Total materials used	Tons	61,045	278,051	1,208.09	34,215.83
Sugar business	Renewable materials used	Tons	13,243,323	7,868,364	19,309,674.54	13,441,251.36
	Non-renewable materials used	Tons	74,357	118,123	74,572.72	115,598.48
	Total materials used	Tons	13,317,680	7,986,487	19,384,247.26	13,556,849.84
Energy business	Renewable materials used	Tons	2,551,099	1,962,692	1,716,777.64	8,426,615.28
	Non-renewable materials used	Tons	173,791	11,845	17,388.67	41,785.03
	Total materials used	Tons	2,724,890	1,974,537	1,734,166.31	8,468,400.31
Wood substitute materials business	Renewable materials used	Tons	1,440,332	927,357	1,458,210.67	1,500,610.11
	Non-renewable materials used	Tons	86,131	78,758	92,324.44	134,630.55
	Total materials used	Tons	1,526,463	1,006,115	1,550,535.11	1,635,240.66

Business Unit	Data	Unit	2021	2022	2023	2024
Fertilizer business	Renewable materials used	Tons	26,849	18,015	23,233.64	18,051.87
	Non-renewable materials used	Tons	646	247,934	109,155.15	139,567.32
	Total materials used	Tons	27,495	265,949	132,388.80	157,619.19
Logistics and warehouse business	Renewable materials used	Tons	0	0	0	0
	Non-renewable materials used	Tons	1,280	34.98	14.08	145.60
	Total materials used	Tons	1,280	34.98	14.08	145.60
Other business	Renewable materials used	Tons	690	18.40	314.17	198,628.35
	Non-renewable materials used	Tons	0.22	41.84	642.06	2,218.30
	Total materials used	Tons	690.22	60.24	956.23	200,756.65
GRI 301-2 (2016) Recycled Input Materials Used						
Mitr Phol Group	Percentage of recycled input materials used	Percent	0.27	0.26	0.20	0.08
Wood substitute materials business	Percentage of recycled input materials used	Percent	2.98	2.86	2.92	1.12
	Recycled input materials used	Tons	45,521	28,758	45,259	18,366.97

Remarks: The total material volume for Mitr Phol Group excludes the volume of materials purchased internally between its companies.

Recycled materials are used in wood substitute materials business to replace virgin materials.

Energy Consumption

Business Unit	Data	Unit	2021	2022	2023	2024
GRI 302-1 (2016) Energy Consumption Within the Organization						
Mitr Phol Group	Total energy consumption within the organization	Million MJ	53,350.74	67,536.56	75,866.43	76,740.96
	Energy consumption within organization from non-renewable fuel	Million MJ	312.09	515.47	531.91	652.04
	Energy consumption within organization from renewable fuel	Million MJ	58,212.20	73,833.07	81,611.04	83,590.73
	Fuel types used					
	Non-renewable fuel					
	- Liquefied petroleum gas (LPG)	Million MJ	78.11	97.01	98.44	110.10
	- Gasoline	Million MJ	0.37	1.54	4.76	5.70
	- Fuel oil	Million MJ	11.68	8.43	5.78	16.39
	- Bituminous	Million MJ	0	132.31	69.32	0
	Non-renewable fuel mixed with renewable fuel					
	- Biodiesel B7	Million MJ	449.43	270.64	337.35	424.50
	- Biodiesel B10	Million MJ	52.48	0.21	5.94	3.49
	- Gasohol E10/ Gasohol 91/ Gasohol 95	Million MJ	9.08	14.71	17.78	19.19

Business Unit	Data	Unit	2021	2022	2023	2024
	- Gasohol E20	Million MJ	0.95	1.08	0.70	0.72
	- Gasohol E85	Million MJ	0.13	0.15	0.05	0
	Renewable fuel					
	- Biogas	Million MJ	324.93	348.20	127.54	76.61
	- Biomass	Million MJ	59,687.68	73,474.25	81,475.29	83,586.07
	Electricity and steam purchased from outside Mitr Phol Group	Million MJ	565.58	576.08	595.81	781.91
	- Non-renewable electricity purchased	Million MJ	565.58	576.08	595.81	781.91
	- Non-renewable steam purchased	Million MJ	0	0	0	0
	Generated electricity from solar power	Million MJ	22.94	29.68	86.24	88.42
	Electricity and steam sold to outside Mitr Phol Group	Million MJ	5,762.07	7,417.73	6,958.56	8,130.36
	- Renewable electricity sold	Million MJ	5,762.07	7,417.73	6,958.56	8,130.36
	- Renewable steam sold	Million MJ	0	0	0	0
Farming business	Total energy consumption within the organization	Million MJ	8.45	11.60	7.86	10.45
	Energy consumption within organization from non-renewable fuel	Million MJ	6.54	4.12	5.49	6.46

Business Unit	Data	Unit	2021	2022	2023	2024
	Energy consumption within organization from renewable fuel	Million MJ	0.32	0.10	0.14	0.12
	Electricity and steam purchased from outside organization	Million MJ	0.97	1.96	1.30	3.34
	- Non-renewable electricity purchased	Million MJ	0.97	1.96	1.30	3.34
	- Renewable electricity purchased	Million MJ	0	0	0	0
	- Renewable steam purchased	Million MJ	0	0	0	0
	Generated electricity from solar power	Million MJ	0.61	5.42	0.93	0.52
Sugar	Total energy consumption within the organization	Million MJ	21,631.66	29,366.67	28,217.94	29,636.01
business	Energy consumption within organization from non-renewable fuel	Million MJ	56.82	175.29	238.10	295.11
	Energy consumption within organization from renewable fuel	Million MJ	2,370.42	3,243.01	3,900.73	3,823.87
	Electricity and steam purchased from outside organization	Million MJ	19,456.37	26,264.06	24,406.45	25,860.78
	- Non-renewable electricity purchased	Million MJ	32.35	27.83	33.33	37.23
	- Renewable electricity purchased	Million MJ	1,365.56	1,811.99	1,735.04	1,852.88
	- Renewable steam purchased	Million MJ	18,058.46	24,424.24	22,638.08	24,007.90

Business Unit	Data	Unit	2021	2022	2023	2024
	Generated electricity from solar power	Million MJ	0	0	0	0
	Electricity and steam sold to outside organization	Million MJ	251.95	315.70	327.33	381.00
	- Renewable electricity sold	Million MJ	251.95	315.70	327.33	378.15
	- Renewable steam sold	Million MJ	0	0	0	2.85
Energy business	Total energy consumption within the organization	Million MJ	26,457.30	29,533.62	40,567.23	44,262.37
	Energy consumption within organization from non-renewable fuel	Million MJ	94.08	177.20	134.24	98.89
	Energy consumption within organization from renewable fuel	Million MJ	51,191.16	65,473.42	73,251.15	74,850.97
	Electricity and steam purchased from outside organization	Million MJ	90.11	97.91	44.74	109.68
	- Non-renewable electricity purchased	Million MJ	90.11	97.91	44.74	109.68
	- Renewable electricity purchased	Million MJ	0	0	0	0
	- Renewable steam purchased	Million MJ	0	0	0	0
	Generated electricity from solar power	Million MJ	20.68	2.85	64.79	48.87
	Electricity and steam sold to outside organization	Million MJ	24,938.73	36,217.75	32,927.68	30,846
	- Renewable electricity sold	Million MJ	6,515.53	9,215.35	8,888.01	9,625.86
	- Renewable steam sold	Million MJ	18,423.20	27,002.40	24,039.67	21,220.18

Business Unit	Data	Unit	2021	2022	2023	2024
Wood substitute materials business	Total energy consumption within the organization	Million MJ	5,137.38	5,372.79	4,986.55	5,370.52
	Energy consumption within organization from non-renewable fuel	Million MJ	119.94	108.32	126.36	132.06
	Energy consumption within organization from renewable fuel	Million MJ	4,597.29	5,086.93	4,428.01	4,891.90
	Electricity and steam purchased from outside organization	Million MJ	420.07	419.98	420.37	551.26
	- Non-renewable electricity purchased	Million MJ	420.07	419.98	420.37	551.26
	- Renewable electricity purchased	Million MJ	0	0	0	0
	- Renewable steam purchased	Million MJ	0	0	0	0
	Generated electricity from solar power	Million MJ	0.08	18.86	12.04	30.41
	Electricity and steam sold to outside organization	Million MJ	0	0	0	0
	- Renewable electricity sold	Million MJ	0	0	0	0
	- Renewable steam sold	Million MJ	0	0	0	0
Fertilizer business	Total energy consumption within the organization	Million MJ	72.68	54.68	49.29	43.27
	Energy consumption within organization from non-renewable fuel	Million MJ	5.61	8.89	6.39	6.67

Business Unit	Data	Unit	2021	2022	2023	2024
	Energy consumption within organization from renewable fuel	Million MJ	51.36	27.95	30.02	22.82
	Electricity and steam purchased from outside organization	Million MJ	14.22	15.29	10.35	11.23
	- Non-renewable electricity purchased	Million MJ	14.22	15.29	10.35	11.23
	- Renewable electricity purchased	Million MJ	0	0	0	0
	- Renewable steam purchased	Million MJ	0	0	0	0
	Generated electricity from solar power	Million MJ	1.48	2.55	2.53	2.55
Logistics and warehouse business	Total energy consumption within the organization	Million MJ	11.47	26.84	13.09	20.28
	Energy consumption within organization from non-renewable fuel	Million MJ	6.91	17.84	3.92	12.22
	Energy consumption within organization from renewable fuel	Million MJ	0.17	0.08	0.03	0.10
	Electricity and steam purchased from outside organization	Million MJ	4.39	8.92	9.14	8.00
	- Non-renewable electricity purchased	Million MJ	4.39	8.92	9.14	8.00
	- Renewable electricity purchased	Million MJ	0	0	0	0
	- Renewable steam purchased	Million MJ	0	0	0	0

Business Unit	Data	Unit	2021	2022	2023	2024
	Generated electricity from solar power	Million MJ	0	0	0	0
Other business	Total energy consumption within the organization	Million MJ	27.21	33.70	112.38	182.28
	Energy consumption within organization from non-renewable fuel	Million MJ	22.18	23.81	17.40	100.63
	Energy consumption within organization from renewable fuel	Million MJ	1.47	1.57	0.96	0.96
	Electricity and steam purchased from outside organization	Million MJ	3.47	8.31	88.06	74.70
	- Non-renewable electricity purchased	Million MJ	3.47	4.19	76.58	61.21
	- Renewable electricity purchased	Million MJ	0	4.07	11.14	10.64
	- Renewable steam purchased	Million MJ	0	0.05	0.34	2.85
	Generated electricity from solar power	Million MJ	0.08	0.01	5.95	6.07
GRI 302-2 (2016) Energy Consumption Outside of the Organization						
Mitr Phol Group	Energy consumption outside of the organization	Million MJ	858.99	1,982.31	1,658.74	1703.07
Farming business	Energy consumption outside of the organization	Million MJ	2.26	4.80	4.00	16.07

Business Unit	Data	Unit	2021	2022	2023	2024
Sugar business	Energy consumption outside of the organization	Million MJ	381.74	982.30	799.64	991.90
Energy business	Energy consumption outside of the organization	Million MJ	176.49	323.54	362.59	286.74
Wood substitute materials business	Energy consumption outside of the organization	Million MJ	232.44	508.00	186.17	133.02
Fertilizer business	Energy consumption outside of the organization	Million MJ	10.08	18.40	104.39	50.01
Logistics and warehouse business	Energy consumption outside of the organization	Million MJ	0.86	128.11	158.24	195.98
Other business	Energy consumption outside of the organization	Million MJ	55.12	17.16	43.72	29.35

Business Unit	Data	Unit	2021	2022	2023	2024
GRI 302-3 (2016) Energy Intensity						
Mitr Phol Group	Energy consumption within the organization per revenue	Million MJ/Million Baht	0.8911	0.6534	0.5147	0.4943
	Energy consumption outside the organization per revenue	Million MJ/Million Baht	0.0143	0.0514	0.0113	0.0110
CSA 2.2.2 Total Energy Consumption (in MWh)						
Mitr Phol Group	Total non-renewable energy consumption	MWh	243,797.42	303,207.78	313,255.08	398,322.17
	Total renewable energy consumption	MWh	14,575,864.44	18,456,962.94	20,760,772.16	20,985,775.39
	Target of total non-renewable energy consumption	MWh			291,079.47 (Reduced 4% from 2022)	278,951.16 (Reduced 8% from 2022)
	Total non-renewable energy consumption per revenue	MWh/Million baht	4.07	2.93	2.06	2.57
	Data coverage	% of revenue	100	100	100	100

Remarks: Net calorific values refer to the data of the Department of Alternative Energy Development and Efficiency and the IPCC 2006.

The proportion of energy consumption within the organization per revenue includes energy consumption of fuel, electricity, steam and solar power.

Energy consumption outside the organization includes energy consumption for raw material transportation by third-party organization, product transportation by third-party organization, and employee's ground transportation and air travel.

Biomass fuel includes bagasses, cane leaves, wood chips, etc.

Water Usage by the Water Sources

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
GRI 303-3 (2018) Water Withdrawal											
Mitr Phol Group	Total volume of water from surface water		Million liters	18,611.42	21,481.86	23,760.83	29,119.56	4,058.85	6,885.44	17,840.23	20,261.58
	- Freshwater (≤ 1,000 mg/L TDS)		Million liters	18,611.42	21,481.86	23,760.83	28,884.85	4,058.85	6,885.44	17,840.23	20,261.58
	- Other water (> 1,000 mg/L TDS)		Million liters	0	0	0	234.71	0	0	0	0
	Total volume of water from groundwater		Million liters	1,570.00	4,888.86	2,089.02	2,052.55	126.89	72.18	830.06	782.00
	- Freshwater (≤ 1,000 mg/L TDS)		Million liters	1,553.72	4,873.48	1,975.98	1,850.15	126.89	72.18	814.38	589.51
	- Other water (> 1,000 mg/L TDS)		Million liters	16.28	15.38	113.05	202.41	0	0	15.69	192.49
	Total volume of water from third-party water		Million liters	87.50	124.27	123.92	253.76	18.07	91.27	163.10	240.68
	- Freshwater (≤ 1,000 mg/L TDS)		Million liters	87.50	124.27	123.92	244.87	18.07	91.27	163.10	231.79
	- Other water (> 1,000 mg/L TDS)		Million liters	0	0	0	8.89	0	0	0	8.89
	Total volume of water from produced water		Million liters	4,957.82	2,897.07	1,714.77	1,993.19	743.69	184.70	1,142.28	1,094.10
	- Freshwater (≤ 1,000 mg/L TDS)		Million liters	4,957.82	2,860.67	1,714.77	1,893.19	743.69	184.70	1,142.28	1,094.10
	- Other water (> 1,000 mg/L TDS)		Million liters	0	36.39	0	100.00	0	0	0	0
	Total volume of water from third-party water	Surface water	Million liters					18.07	65.82	163.10	231.79
		Ground water	Million liters					0	0	0	0
	Total volume of water			Million liters	25,226.73	29,392.06	27,688.54	33,419.06	4,947.49	7,233.59	19,975.67

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
Farming business	Total volume of water from surface water		Million liters	3,770.48	3,320.31	2,920.57	5,189.88	1,052.30	226.77	2,920.57	5,189.88
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	3,770.48	3,320.31	2,920.57	5,189.88	1,052.30	226.77	2,920.57	5,189.88
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from groundwater		Million liters	383.45	3,856.25	583.11	519.58	124.66	48.36	583.11	519.58
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	381.47	3,856.25	583.11	519.58	124.66	48.36	583.11	519.58
	- Other water ($> 1,000$ mg/L TDS)		Million liters	1.98	0	0	0	0	0	0	0
	Total volume of water from third-party water		Million liters	0	0	0	0	0	0	0	0
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water	Surface water	Million liters					0	0	0	0
	from third-party water	Ground water	Million liters					0	0	0	0
	Total volume of water		Million liters	4,153.93	7,176.56	3,503.68	5,709.46	1,176.96	275.13	3,503.68	5,709.46
Sugar business	Total volume of water from surface water		Million liters	6,733.59	10,485.08	12,666.10	14,224.17	3,006.55	5,909.45	10,360.84	10,052.78
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	6,733.59	10,485.08	12,666.10	14,224.17	3,006.55	5,909.45	10,360.84	10,052.78
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from groundwater		Million liters	80.19	71.27	53.85	102.59	0	0	6.57	19.11
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	75.76	71.27	42.66	102.59	0	0	0	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	4.43	0	11.18	0	0	0	6.57	19.11

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
	Total volume of water from third-party water		Million liters	403.47	149.09	282.64	675.63	21.15	25.46	0	257.25
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	403.47	149.09	282.64	675.63	21.15	25.46	0	257.25
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from produced water		Million liters	4,957.82	2,897.07	1,714.77	1,245.57	743.69	184.71	1,142.28	863.70
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	4,957.82	2,860.67	1,714.77	1,245.57	743.69	184.71	1,142.28	863.70
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	36.39	0	0	0	0	0	0
	Total volume of water from third-party water	Surface water	Million liters					21.15	25.46	0	257.25
		Ground water	Million liters					0	0	0	0
	Total volume of water		Million liters	12,175.07	13,602.51	14,717.36	16,247.95	3,771.39	6,119.61	11,509.69	11,192.84
Energy business	Total volume of water from surface water		Million liters	8,096.15	7,669.33	7,524.66	9,416.54	0	749.22	3,909.31	4,729.95
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	8,096.15	7,669.33	7,524.66	9,181.83	0	749.22	3,909.31	4,729.95
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	234.71	0	0	0	0
	Total volume of water from groundwater		Million liters	202.96	133.55	388.40	268.58	2.23	20.48	20.70	20.66
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	193.10	118.17	286.53	238.01	2.23	20.48	11.59	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	9.86	15.38	101.86	11.34	0	0	9.12	1.42
	Total volume of water from third-party water		Million liters	4,528.90	5,406.22	3,672.53	4,311.76	2,310.74	2,591.80	2,366.02	2,412.17
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	4,528.90	5,272.28	3,614.13	3,951.17	2,310.74	2,591.80	2,366.02	2,412.17
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	133.94	58.4	360.58	0	0	0	0

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
	Total volume of water from produced water		Million liters	0	0	0	747.63	0	0	0	230.40
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	0	0	0	647.63	0	0	0	230.40
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	100.00	0	0	0	0
	Total volume of water from third-party water	Surface water	Million liters					2,310.74	2,591.80	2,366.02	2,412.17
		Groundwater	Million liters					0	0	0	0
	Total volume of water		Million liters	12,828.01	13,209.11	11,585.58	14,744.50	2,312.97	3,361.50	6,296.04	7,393.18
Wood substitute materials business	Total volume of water from surface water		Million liters	0	0	0	0	0	0	0	0
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from groundwater		Million liters	802.50	814.52	843.99	939.15	0	0	0	0
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	802.50	814.52	843.99	939.15	0	0	0	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from third-party water		Million liters	22.96	6.82	12.19	13.89	6.25	6.82	4.01	3.86
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	22.96	6.82	12.19	13.89	6.25	6.82	4.01	3.86
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from third-party water	Surface water	Million liters					6.25	6.82	4.01	3.86
		Groundwater	Million liters					0	0	0	0
	Total volume of water		Million liters	825.46	821.35	856.18	953.04	6.25	6.82	4.01	3.86

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
Fertilizer business	Total volume of water from surface water		Million liters	0	0	0	0	0	0	0	0
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from groundwater		Million liters	4.37	5.45	9.04	5.35	0	0	9.04	5.35
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	4.37	5.45	9.04	5.35	0	0	9.04	5.35
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from third-party water		Million liters	11.81	10.50	13.44	16.36	11.81	10.50	13.44	16.36
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	11.81	10.50	13.44	7.47	11.81	10.50	13.44	7.47
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	8.89	0	0	0	8.89
	Total volume of water	Surface water	Million liters					11.81	10.50	13.44	7.47
	from third-party water	Ground water	Million liters					0	0	0	0
	Total volume of water		Million liters	16.18	15.95	22.47	21.71	11.81	10.50	22.47	21.71
Logistics and warehouse business	Total volume of water from surface water		Million liters	0	0	0	0	0	0	0	0
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from groundwater		Million liters	0	0	0	0	0	0	0	0
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
	Total volume of water from third-party water		Million liters	50.53	26.90	21.76	22.96	0	0	6.81	22.96
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	50.53	26.90	21.76	22.96	0	0	6.81	22.96
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from third-party water	Surface water	Million liters					0	0	6.81	22.96
		Groundwater	Million liters					0	0	0	0
	Total volume of water		Million liters	50.53	26.90	21.76	22.96	0	0	6.81	22.96
Other business	Total volume of water from surface water		Million liters	11.20	7.14	649.50	288.97	0	0	649.50	288.97
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	11.20	7.14	649.50	288.97	0	0	649.50	288.97
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0	0	0	0	0
	Total volume of water from groundwater		Million liters	96.52	7.82	210.65	217.31	0	0	210.65	217.31
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	96.52	7.82	210.65	26.24	0	0	210.65	26.24
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	191.07	0	0	0	191.07
	Total volume of water from third-party water		Million liters	2.20	5.51	81.22	71.21	0	0	81.22	71.21
	- Freshwater ($\leq 1,000$ mg/L TDS)		Million liters	2.20	5.51	81.22	71.16	0	0	81.22	71.16
	- Other water ($> 1,000$ mg/L TDS)		Million liters	0	0	0	0.05	0	0	0	0.05
	Total volume of water from third-party water	Surface water	Million liters					0	0	81.22	71.16
		Groundwater	Million liters					0	0	0	0
	Total volume of water		Million liters	109.92	20.47	941.37	577.48	0	0	941.37	577.48

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
Proportion of Water Withdrawal from Water Sources											
Mitr Phol Group	Volume of water withdrawal from water sources per revenue		Million liters/Million baht	0.3629 ^A	0.4213 ^A	0.2843 ^A					
			cu.m./Million baht	362.8879 ^A	421.3414 ^A	284.3462 ^A					
GRI 303-4 (2018) Water Discharge											
Mitr Phol Group	Volume of water discharge by destination	Volume of water discharge to surface water	Million liters	402.53	10.05	37.71	213.86				
		Volume of water discharge to groundwater	Million liters	0	0	0	0				
		Volume of water discharge to third-party water	Million liters	48.56	17.29	63.27	30.35				
		Total volume of water discharge	Million liters	451.09	27.35	100.98	244.21				
	Volume of water discharge to	Freshwater (≤ 1,000 mg/L TDS)	Million liters	63.82	27.35	97.04	217.86	5.00	12.34	61.88	73.31

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
	outside organization	Other water (> 1,000 mg/L TDS)	Million liters	387.27	0	3.94	26.36	385.34	0	3.94	4.61
Farming business	Volume of water discharge by destination	Volume of water discharge to surface water	Million liters	0	0	0	0				
		Volume of water discharge to groundwater	Million liters	0	0	0	0				
		Volume of water discharge to third-party water	Million liters	0	0	0	0				
		Total volume of water discharge	Million liters	0	0	0	0				
	Volume of water discharge to outside organization	Freshwater (\leq 1,000 mg/L TDS)	Million liters	0	0	0	0	0	0	0	0
		Other water (> 1,000 mg/L TDS)	Million liters	0	0	0	0	0	0	0	0
Sugar business	Volume of water discharge by destination	Volume of water discharge to surface water	Million liters	378.85	0	0	0				
		Volume of water discharge to groundwater	Million liters	0	0	0	0				

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
		Volume of water discharge to third-party water	Million liters	0	0	898.76	912.17				
		Total volume of water discharge	Million liters	378.85	0	898.76	912.17				
	Volume of water discharge to outside organization	Freshwater ($\leq 1,000$ mg/L TDS)	Million liters	0	0	898.76	912.17	0	0	898.76	912.17
		Other water ($> 1,000$ mg/L TDS)	Million liters	378.85	0	0	0	378.85	0	0	0
Energy business	Volume of water discharge by destination	Volume of water discharge to surface water	Million liters	0	0	0	148.66				
		Volume of water discharge to groundwater	Million liters	0	0	0	0				
		Volume of water discharge to third-party water	Million liters	1.93	286.70	256.19	224.81				
		Total volume of water discharge	Million liters	1.93	286.70	256.19	373.47				
	Volume of water discharge to	Freshwater ($\leq 1,000$ mg/L TDS)	Million liters	0	286.70	6.63	355.26	0	285.98	6.37	224.81

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
	outside organization	Other water (> 1,000 mg/L TDS)	Million liters	1.93	0	249.56	18.20	0	0	249.56	0
Wood substitute Materials business	Volume of water discharge by destination	Volume of water discharge to surface water	Million liters	12.18	0	22.94	17.63				
		Volume of water discharge to groundwater	Million liters	0	0	0	0				
		Volume of water discharge to third-party water	Million liters	5.00	3.94	3.11	0				
		Total volume of water discharge	Million liters	17.18	3.94	26.05	17.63				
	Volume of water discharge to outside organization	Freshwater (\leq 1,000 mg/L TDS)	Million liters	17.18	3.94	26.05	14.09	5.00	3.94	3.11	0
		Other water (> 1,000 mg/L TDS)	Million liters	0	0	0	3.54	0	0	0	0
Fertilizer business	Volume of water discharge to surface water	Volume of water discharge to surface water	Million liters	0	0	0	0				
	discharge by destination	Volume of water discharge to groundwater	Million liters	0	0	0	0				

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
		Volume of water discharge to third-party water	Million liters	6.49	8.4	9.69	9.28				
		Total volume of water discharge	Million liters	6.49	8.4	9.69	9.28				
	Volume of water discharge to outside organization	Freshwater ($\leq 1,000$ mg/L TDS)	Million liters	0	8.4	5.75	4.66	0	8.4	5.75	4.66
		Other water ($> 1,000$ mg/L TDS)	Million liters	6.49	0	3.94	4.61	6.49	0	3.94	4.61
Logistics and Warehouse business	Volume of water discharge by destination	Volume of water discharge to surface water	Million liters	7.04	6.14	5.45	4.27				
		Volume of water discharge to groundwater	Million liters	0	0	0	0				
		Volume of water discharge to third-party water	Million liters	33.38	0.01	11.96	14.09				
		Total volume of water discharge	Million liters	40.42	6.15	17.41	18.36				
	Volume of water discharge to	Freshwater ($\leq 1,000$ mg/L TDS)	Million liters	40.42	6.15	17.41	18.36	0	0	5.45	18.36

Business Unit	Data		Unit	All areas				Area with Water Stress			
				2021	2022	2023	2024	2021	2022	2023	2024
	outside organization	Other water (> 1,000 mg/L TDS)	Million liters	0	0	0	0	0	0	0	0
Other business	Volume of water discharge by destination	Volume of water discharge to surface water	Million liters	4.46	3.92	9.33	43.31				
		Volume of water discharge to groundwater	Million liters	0	0	0	0				
		Volume of water discharge to third-party water	Million liters	1.76	4.22	31.88	1.24				
		Total volume of water discharge	Million liters	6.22	8.14	41.20	44.54				
	Volume of water discharge to outside organization	Freshwater (≤ 1,000 mg/L TDS)	Million liters	6.22	8.14	41.20	44.54	0	0	41.20	44.54
		Other water (> 1,000 mg/L TDS)	Million liters	0	0	0	0	0	0	0	0
		GRI 303-5 (2018) Water Consumption									
Mitr Phol Group	Total water consumption		Million liters	24,775.64	29,078.73	22,778.82	30,680.20	4,557.15	6,935.27	16,096.52	20,465.28

Business Unit	Data	Unit	All areas				Area with Water Stress			
			2021	2022	2023	2024	2021	2022	2023	2024
Farming business	Total water consumption	Million liters	4,153.93	7,176.56	3,503.68	5,709.46	1,176.96	275.13	3,503.68	5,709.46
Sugar business	Total water consumption	Million liters	11,796.22	13,602.51	13,818.61	15,335.78	3,392.54	6,119.61	10,610.94	10,280.67
Energy business	Total water consumption	Million liters	12,826.08	13,049.90	11,313.81	14,371.04	2,312.97	3,075.52	6,040.11	7,168.37
Wood substitute materials business	Total water consumption	Million liters	808.28	835.60	830.13	935.41	1.25	2.89	0.90	3.86
Fertilizer business	Total water consumption	Million liters	9.69	7.55	12.78	12.43	5.32	2.10	12.78	12.43
Logistics and warehouse business	Total water consumption	Million liters	10.11	20.75	4.35	4.59	0	0	1.36	4.59
Other business	Total water consumption	Million liters	103.69	12.33	900.16	539.94	0	3.57	900.16	539.94

Business Unit	Data	Unit	All areas				Area with Water Stress			
			2021	2022	2023	2024	2021	2022	2023	2024
CSA 2.5.2-2.5.3 Water Consumption & Water Consumption in Water-Stressed Area										
Mitr Phol Group	A. Water withdrawal (excluding saltwater)	Million cubic meters	25.23	29.39	27.69	33.42	3.15	6.04	14.59	14.39
	- Fresh surface water	Million cubic meters	18.61	21.48	23.76	29.12	3.01	5.88	13.60	13.37
	- Groundwater	Million cubic meters	1.57	4.89	2.09	2.05	0.13	0.07	0.83	0.78
	- Produced water	Million cubic meters	4.96	2.90	1.71	2.00				
	- Third party sources	Million cubic meters	0.09	0.12	0.12	0.25	0.02	0.09	0.16	0.24
	B. Water discharge (excluding saltwater)	Million cubic meters	0.45	0.03	0.10	0.24	0.39	0.01	0.07	0.08
	Total net freshwater consumption (A-B)	Million cubic meters	24.78	29.36	27.59	33.18	2.76	6.03	14.53	14.31
	Target of total net freshwater consumption	Million cubic meters/ million baht			28.19	27.01			5.79	5.55

Business Unit	Data	Unit	All areas				Area with Water Stress			
			2021	2022	2023	2024	2021	2022	2023	2024
					(Reduced 4% from 2022)	(Reduced 8% from 2022)			(Reduced 4% from 2022)	(Reduced 8% from 2022)
	Total net freshwater consumption per revenue	Million cubic meters/ million baht	0.00041	0.00028	0.00019	0.00021	0.00005	0.00006	0.00010	0.00009
	Data coverage	% of revenue	100	100	100	100	100	100	100	100

Remarks:

1. The AQUEDUCT Water Risk Atlas's was used to assess water-stressed area.
2. The sugar business consumes a significant amount of water as treated wastewater is not discharged outside the factory premises. However, the company has implemented a system to reuse treated water within the factory for various purposes, such as spraying on bagasse piles, wetting conveyor belts carrying boiler ash, spraying to reduce dust in open areas, watering sugarcane truck parking lots, and irrigating plants.

Water Discharge Quality by Business Unit

Business Unit	Water Quality	Standard Level	Average of Water Discharge Quality			
			2021	2022	2023	2024
GRI 303-4 (2018) Water Discharge Quality						
Farming business	BOD (mg/l)	-	NR	NR	NR	NR
	COD (mg/l)	-	NR	NR	NR	NR
	TSS (mg/l)	-	NR	NR	NR	NR
Sugar business	BOD (mg/l)	-	NR	NR	NR	NR
	COD (mg/l)	-	NR	NR	NR	NR
	TSS (mg/l)	-	NR	NR	NR	NR
Energy business	BOD (mg/l)	20	13.4	12.17	2.28	0.89
	COD (mg/l)	120	71.2	51.88	28.88	4.19
	TSS (mg/l)	50	24.2	24.62	0	0
Wood substitute materials business	BOD (mg/l)	20	10.3	6.51	5.79	4.78
	COD (mg/l)	120	71.8	45.97	61.65	51.83
	TSS (mg/l)	50	22.9	13.76	13.99	6.83
Fertilizer business	BOD (mg/l)	500*	23.0	34.40	35.62	19.22
	COD (mg/l)	750*	169.8	137.58	128.75	114.25
	TSS (mg/l)	200*	46.6	39.95	43.50	25.42

Business Unit	Water Quality	Standard Level	Average of Water Discharge Quality			
			2021	2022	2023	2024
Logistics and warehouse business	BOD (mg/l)	20	32.6	2.32	5.34	1.68
	COD (mg/l)	120	61.7	39.39	44.77	51.46
	TSS (mg/l)	50	6.5	8.39	11.19	7.53
Other business	BOD (mg/l)	20	14.4	-	23.45	13.72
	COD (mg/l)	120	40.0	46.20	55.28	37.64
	TSS (mg/l)	50	15.0	33.34	17.71	11.38

Remark:

- Standard level applied here is in accordance with the standards in the Notification of the Ministry of Industry, B.E. 2560 (2017), Re: Prescribing the Standards for the Control of Water Discharge from the Factory.
- * For the fertilizer business, the standards applied are in accordance with the Notification of the Industrial Estate Authority of Thailand No. 76/2017, Re: Prescribing General Standards for Discharging Wastewater into the Central Wastewater Treatment System of the Industrial Estate Authority.

Greenhouse Gas (GHG) Emissions

Business Unit	Data	Unit	2021	2022	2023	2024
GRI 305-1 (2016)/ CSA 2.6.1 Direct GHG Emissions (Scope 1)						
Mitr Phol Group	Direct GHG emissions (Scope 1)	Tons CO ₂ e	382,318	793,166.89	349,568.60	394,861.87
	Biogenic CO ₂ emissions	Tons CO ₂	11,376,682	7,908,479.27	8,777,378.23	9,233,308.35
	Target of direct GHG emissions (Scope 1)	Tons CO ₂ e			761,440.21 (Reduced 4% from 2022)	729,713.54 (Reduced 8% from 2022)
	Data coverage	% of revenue	100	100	100	100
Farming business	Direct GHG emissions (Scope 1)	Tons CO ₂ e	2,437	2,303.85	2,404.20	2,454.72
	Biogenic CO ₂ emissions	Tons CO ₂	0	0	0	0
Sugar business	Direct GHG emissions (Scope 1)	Tons CO ₂ e	98,394	65,068.11	72,662.61	80,906.73
	Biogenic CO ₂ emissions	Tons CO ₂	212,263	337,820.99	403,385.41	396,990.66
Energy business	Direct GHG emissions (Scope 1)	Tons CO ₂ e	252,916	698,994.57	221,333.90	258,763.01
	Biogenic CO ₂ emissions	Tons CO ₂	10,583,344	6,997,827.02	7,866,072.41	8,279,826.72
Wood substitute materials business	Direct GHG emissions (Scope 1)	Tons CO ₂ e	19,219	20,313.43	17,565.38	20,087.12
	Biogenic CO ₂ emissions	Tons CO ₂	575,357	569,729.05	493,517.57	547,335.07
Fertilizer business	Direct GHG emissions (Scope 1)	Tons CO ₂ e	6,486	3,032.21	14,345.82	581.03
	Biogenic CO ₂ emissions	Tons CO ₂	5,718	3,102.22	3,343.81	2,554.94

Business Unit	Data	Unit	2021	2022	2023	2024
Logistics and warehouse business	Direct GHG emissions (Scope 1)	Tons CO ₂ e	819	1,389.25	308.64	994.37
	Biogenic CO ₂ emissions	Tons CO ₂	0	0	0	0
Other business	Direct GHG emissions (Scope 1)	Tons CO ₂ e	2,047	2,065.46	21,048.05	31,074.89
	Biogenic CO ₂ emissions	Tons CO ₂	0	0	11,059.04	6,600.96
GRI 305-2 (2016)/ CSA 2.6.2 Energy Indirect GHG Emissions (Scope 2)						
Mitr Phol Group	Market-based energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	77,988	81,182.59	83,017.38	75,001.66
	Target of market-based energy indirect GHG emissions (Scope 2)	Tons CO ₂ e			77,935.29 (Reduced 4% from 2022)	74,687.98 (Reduced 8% from 2022)
	Location-based energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	77,988	81,182.59	83,017.38	75,001.66
	Target of location-based energy indirect GHG emissions (Scope 2)	Tons CO ₂ e			77,935.29 (Reduced 4% from 2022)	74,687.98 (Reduced 8% from 2022)
	Data coverage for location-based and market based	% of revenue	100	100	100	100
Farming business	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	333	274.82	470.47	464.39

Business Unit	Data	Unit	2021	2022	2023	2024
Sugar business	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	86,510	110,902.62	104,686.65	112,113.34
Energy business	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	13,935	13,594.59	6,212.93	14,312.16
Wood substitute materials business	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	56,047	64,183.21	59,973.37	43,901.28
Fertilizer business	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	2,224	2,123.65	1,437.08	1,558.77
Logistics and warehouse business	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	904	1,238.29	1,269.46	1,104.97
Other business	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e	615	656.56	10,840.95	8,696.90
GRI 305-3 (2016) / CSA 2.6.3 Other Indirect GHG Emissions (Scope 3)						
Mitr Phol Group	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	1,193,123	1,428,355.05	1,806,612.68	1,624,433.19
	Target of other indirect GHG emissions (Scope 3)	Tons CO ₂ e			1,399,788 (Reduced 2% from 2022)	1,371,220.85 (Reduced 4% from 2022)

Business Unit	Data	Unit	2021	2022	2023	2024
	1. Purchased goods and services	Tons CO ₂ e	807,493	988,301.45	1,339,971.05	1,051,915.03
	2. Capital goods	Tons CO ₂ e	-	-	-	4.19
	3. Fuel and energy related activities (not included in Scope 1 or 2)	Tons CO ₂ e	24,959	11,907.06	21,596.94	60,709.56
	4. Upstream transportation and distribution	Tons CO ₂ e	106,497	136,402.65	150,855.61	201,405.43
	5. Waste generated in operations	Tons CO ₂ e	1,503	1,017.04	1,140.49	3,224.51
	6. Business travel	Tons CO ₂ e	97	269.91	502.94	604.12
	7. Employee commuting	Tons CO ₂ e	13,830	8,968.52	6,713.55	4,782.95
	8. Upstream leased assets	Tons CO ₂ e	-	-	-	973.99
	9. Downstream transportation and distribution	Tons CO ₂ e	103,527	169,047.04	121,242.93	112,644.56
	10. Processing of sold products	Tons CO ₂ e	NR	NR	NR	NR
	11. Use of sold products	Tons CO ₂ e	132,719	110,001.46	163,356.49	185,021.45
	12. End of life treatment of sold products	Tons CO ₂ e	2,320	2,156.25	1,232.68	2,442.64

Business Unit	Data	Unit	2021	2022	2023	2024
	13. Downstream leased assets	Tons CO ₂ e	178	283.72	-	704.76
	14. Franchises	Tons CO ₂ e	NR	NR	NR	NR
	15. Investments	Tons CO ₂ e	-	-	-	-
Farming business	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	5,981	3,639.83	3,514.80	5,461.22
Sugar business	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	590,103	789,968.92	1,065,932.65	915,152.23
Energy business	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	406,006	177,142.12	194,270.59	208,848.51
Wood substitute business	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	219,845	280,861.64	253,522.63	218,157.08
Fertilizer business	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	424,630	231,572.12	305,617.56	309,211.54
Logistics and warehouse business	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	2,448	31,337.66	37,580.76	89,296.54
Other business	Other indirect GHG emissions (Scope 3)	Tons CO ₂ e	4,431	6,815.74	27,767.78	19,188.50

Business Unit	Data	Unit	2021	2022	2023	2024
GHG Emissions Intensity						
Mitr Phol Group	Direct GHG emissions (Scope 1) per revenue	Tons CO ₂ e/Million baht	6.39	7.67	2.37	2.54
	Energy indirect GHG emissions (Scope 2) per revenue	Tons CO ₂ e/Million baht	1.29	0.79	0.56	0.48
	Other indirect GHG emissions (Scope 3) per revenue	Tons CO ₂ e/Million baht	19.93	13.82	12.26	10.46

Remarks:

1. The GHG emissions report covers CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃ calculated and illustrated in the form of carbon dioxide equivalent (CO₂e), using Global Warming Potential (GWP) based on IPCC AR5.
2. Reporting scope of GHG emissions is operational control.
3. The emission factors used are referenced from the Thailand Greenhouse Gas Management Organization (Public Organization), IPCC 2006, and the Thai National LCI database.
4. The reporting of Scope 2 GHG emissions for Mitr Phol Group follows the location-based method, with the data being identical to that of the market-based method.
5. Scope 3 GHG emissions were gathered and calculated in accordance with the Greenhouse Gas Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
6. “-” Scope 3 GHG emissions cannot be calculated due to the unavailability of emission factor data from our suppliers and the limitation of data collection.

Air Emissions

Business Unit	Data	Unit	2021	2022	2023	2024
GRI 305-7 (2016) Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), and Other Significant Air Emissions						
Mitr Phol Group	NO _x	Tons	NA	NA	572.32	774.22
	SO _x	Tons	NA	NA	82.44	60.05
	CO	Tons	NA	NA	313.28	406.60
	TSP	Tons	NA	NA	425.92	477.11
	VOCs	Tons	NA	NA	0.52	0.29
Sugar business	NO _x	Tons	NA	NA	25.98	21.21
	SO _x	Tons	NA	NA	1.55	2.84
	CO	Tons	NA	NA	25.09	32.55
	TSP	Tons	NA	NA	30.96	63.80
Energy business	NO _x	Tons	NA	NA	222.70	202.88
	SO _x	Tons	NA	NA	6.51	3.40
	CO	Tons	NA	NA	247.63	329.05
	TSP	Tons	NA	NA	176.50	28.03
	VOCs	Tons	NA	NA	0.52	0.05
Wood substitute materials business	NO _x	Tons	NA	NA	322.65	549.65
	SO _x	Tons	NA	NA	70.07	52.37

Business Unit	Data	Unit	2021	2022	2023	2024
	CO	Tons	NA	NA	39.70	43.88
	TSP	Tons	NA	NA	215.31	383.17
Fertilizer business	NO _x	Tons	NA	NA	0.68	0.26
	SO _x	Tons	NA	NA	4.26	0.04
	CO	Tons	NA	NA	0.77	0.44
	TSP	Tons	NA	NA	2.63	0.50
Other business	NO _x	Tons	NA	NA	0.31	0.23
	SO _x	Tons	NA	NA	0.06	1.40
	CO	Tons	NA	NA	0.09	0.67
	TSP	Tons	NA	NA	0.53	1.60

Remarks:

1. The farming business, as well as the logistics and warehouse business, do not have air pollution data as they do not have air emission stacks.

Waste Management

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
GRI 306-3 (2020) Waste Generated						
Mitr Phol Group	Total weight of waste generated	Tons	3,179,774.70	3,090,052.18	2,549,167.73	2,215,539.21
	Total weight of hazardous waste generated	Tons	725.88	7,603.70	13,597.27	2,599.52
	Total weight of non-hazardous waste generated	Tons	3,179,048.82	3,082,448.49	2,535,570.45	2,212,939.69
Farming business	Total weight of waste generated	Tons	4.36	33,595.30	19.50	13.34
	Total weight of hazardous waste generated	Tons	0	3.63	3.79	4.10
	Total weight of non-hazardous waste generated	Tons	4.36	33,591.67	15.71	9.24
Sugar business	Total weight of waste generated	Tons	3,706,609.91	5,110,065.97	5,544,015.70	4,516,732.83
	Total weight of hazardous waste generated	Tons	257.08	4,377.34	404.84	571.63
	Total weight of non-hazardous waste generated	Tons	3,706,352.83	5,105,688.64	5,543,610.86	4,516,161.20
Energy business	Total weight of waste generated	Tons	2,466,188.34	2,656,608.12	3,083,156.81	2,631,812.79
	Total weight of hazardous waste generated	Tons	100.45	2,832.83	12,751.70	1,688.63
	Total weight of non-hazardous waste generated	Tons	2,466,087.90	2,653,775.29	3,070,405.10	2,630,124.16
Wood substitute materials business	Total weight of waste generated	Tons	30,749.09	23,659.07	12,923.32	19,349.31
	Total weight of hazardous waste generated	Tons	366.20	368.56	389.72	292.45
	Total weight of non-hazardous waste generated	Tons	30,382.89	23,290.51	12,533.60	19,056.86

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
Fertilizer business	Total weight of waste generated	Tons	44.88	114.41	104.21	135.94
	Total weight of hazardous waste generated	Tons	0.55	14.21	3.06	38.31
	Total weight of non-hazardous waste generated	Tons	44.33	100.20	101.15	97.63
Logistics and warehouse business	Total weight of waste generated	Tons	457.02	224.33	103.40	217.68
	Total weight of hazardous waste generated	Tons	0.61	7.13	34.42	1.42
	Total weight of non-hazardous waste generated	Tons	456.40	217.20	68.98	232.46
Other business	Total weight of waste generated	Tons	51.00	217.58	145,510.19	3,616.10
	Total weight of hazardous waste generated	Tons	1.00	0	9.75	2.98
	Total weight of non-hazardous waste generated	Tons	50.00	217.58	145,500.44	3,613.12
GRI 306-4 (2020) Waste Diverted from Disposal						
Mitr Phol Group	Total weight of waste diverted from disposal	Tons	3,062,560.96	2,089,874.73	2,308,402.94	2,344,773.42
	Total weight of hazardous waste diverted from disposal	Tons	99.98	3,692.33	1,589.81	58.31
	Onsite					
	- Reuse	Tons	5.83	1.80	0	0
	- Recycling	Tons	0	0	0	0.06
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0.86	3.80	3.48	46.76

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Recycling	Tons	85.85	2,881.86	677.33	2.60
	- Other recovery operations	Tons	7.44	804.87	909	8.89
	Total weight of non-hazardous waste diverted from disposal	Tons	3,062,460.98	2,086,182.40	2,306,813.13	2,344,715.12
	Onsite					
	- Reuse	Tons	39.68	0	1,966.68	9,180.00
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	8,312.03	146,644.04	331,768.36	346,457.05
	- Other recovery operations	Tons	0	26.80	0	110.09
	Offsite					
	- Reuse	Tons	2.75	0	19.02	60.00
	- Recycling	Tons	75,095.53	629,249.83	294,950.07	204,697.71
	- Composting	Tons	2,502,169.18	914,024.99	1,621,889.18	1,355,262.33
	- Other recovery operations	Tons	476,841.82	396,236.74	56,219.82	428,947.94
Farming business	Total weight of waste diverted from disposal	Tons	4.36	0	6.70	3.89
	Total weight of hazardous waste diverted from disposal	Tons	0	0	0	3.89
	Onsite					
	- Reuse	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	3.89
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Total weight of non-hazardous waste diverted from disposal	Tons	4.36	0	6.70	0
	Onsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	6.70	0
	- Composting	Tons	0	0	0	0
	- Other recovery operations	Tons	4.36	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
Sugar business	Total weight of waste diverted from disposal	Tons	640,293.65	1,357,872.03	724,139.02	625,920.97
	Total weight of hazardous waste diverted from disposal	Tons	65.64	303.11	271.65	2.53
	Onsite					
	- Reuse	Tons	1.73	0	0	0
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0.86	3.80	3.48	2.53
	- Recycling	Tons	63.05	286.67	268.17	0
	- Other recovery operations	Tons	0	12.64	0	0
	Total weight of non-hazardous waste diverted from disposal	Tons	640,228.01	1,357,568.93	723,867.37	625,918.44
	Onsite					
	- Reuse	Tons	22.55	0	0	0
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	500	137,295.71	113,213.05	159,921.99
	- Other recovery operations	Tons	0	19.80	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	65,738.77	628,648.94	282,347.38	192,627.15
	- Composting	Tons	572,778.62	590,221.47	327,507.76	335,294.29
	- Other recovery operations	Tons	1,188.07	1,383.01	799.18	1,557.82
Energy business	Total weight of waste diverted from disposal	Tons	2,448,217.41	1,713,362.98	2,070,878.92	2,643,537.54
	Total weight of hazardous waste diverted from disposal	Tons	29.61	3,295.38	922.59	31.18
	Onsite					
	- Reuse	Tons	4.10	1.80	0	0
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	22.80	2,505.14	22.59	31.18
	- Other recovery operations	Tons	2.71	788.44	900	0
	Total weight of non-hazardous waste diverted from disposal	Tons	2,448,187.80	1,710,067.60	2,069,956.33	2,643,506.36
	Onsite					

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Reuse	Tons	17.13	0	0	0
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	7,812.03	71,771.65	218,555.31	292,665.66
	- Other recovery operations	Tons	0	7	0	0
	Offsite					
	- Reuse	Tons	2.75	0	19.02	0
	- Recycling	Tons	9,291.27	582.65	12,165.23	11,511.55
	- Composting	Tons	1,955,919.47	1,243,382.72	1,784,311.67	2,019,489.92
	- Other recovery operations	Tons	475,145.15	394,323.58	54,905.10	426,944.21
Wood substitute materials business	Total weight of waste diverted from disposal	Tons	30,331.60	23,287.53	12,770.01	16,878.10
	Total weight of hazardous waste diverted from disposal	Tons	4.12	86.72	389.71	292.45
	Onsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	44.23
	- Recycling	Tons	0	82.93	386.06	248.16

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Other recovery operations	Tons	4.12	3.79	3.66	0
	Total weight of non-hazardous waste diverted from disposal	Tons	30,327.48	23,200.81	12,380.29	16,585.65
	Onsite					
	- Reuse	Tons	0	0	1,966.68	9,180.00
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	0	0	0	965.26
	- Other recovery operations	Tons	0	0	0	110.09
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	65.49	8.8	380.70	546.34
	- Composting	Tons	29,805.93	22,725.15	9,690.34	5,488.31
	- Other recovery operations	Tons	456.07	466.86	342.56	295.65
Fertilizer business	Total weight of waste diverted from disposal	Tons	23.98	62.29	71.19	65.86
	Total weight of hazardous waste diverted from disposal	Tons	0	0	0.52	5.86
	Onsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0.52	5.86
	- Other recovery operations	Tons	0	0	0	0
	Total weight of non-hazardous waste diverted from disposal	Tons	23.98	62.29	70.67	60.00
	Onsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	60.00
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	0	0	0	0
	- Other recovery operations	Tons	23.98	62.29	70.67	0

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Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
Logistics and warehouse business	Total weight of waste diverted from disposal	Tons	24.81	7.12	48.23	101.51
	Total weight of hazardous waste diverted from disposal	Tons	0.61	7.12	0.82	5.00
	Onsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	7.12	0	0
	- Other recovery operations	Tons	0.61	0	0.82	5.00
	Total weight of non-hazardous waste diverted from disposal	Tons	24.20	0	47.41	96.29
	Onsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	-					

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	0	0	0	96.29
	- Other recovery operations	Tons	24.20	0	47.41	0
Other business	Total weight of waste diverted from disposal	Tons	0	10.44	109.47	3,430.97
	Total weight of hazardous waste diverted from disposal	Tons	0	0	4.52	0
	Onsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Other recovery operations	Tons	0	0	4.52	0
	Total weight of non-hazardous waste diverted from disposal	Tons	0	10.44	104.95	3,430.97
	Onsite					

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	0	0	0
	- Composting	Tons	0	0	0	9.12
	- Other recovery operations	Tons	0	0	0	0
	Offsite					
	- Reuse	Tons	0	0	0	0
	- Recycling	Tons	0	9.44	50.05	11.04
	- Composting	Tons	0	0	0	3,355.21
	- Other recovery operations	Tons	0	1	54.90	53.97
Mitr Phol Group	Total weight of waste directed to disposal	Tons	53,252.39	27,130.96	13,986.02	6,031.69
	Total weight of hazardous waste directed to disposal	Tons	587.45	4,724.79	274.42	3,618.14
	Onsite					
	- Incineration with energy recovery	Tons	0	0.30	0	1,539.55
	- Incineration without energy recovery	Tons	1	0.93	0	0
	- Landfilling	Tons	0	5.56	0	0
	- Other disposal operations	Tons	0	0.50	0	1.15
	Offsite					
	- Incineration with energy recovery	Tons	318.53	282.43	18.18	579.41

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Incineration without energy recovery	Tons	34.79	3,979.15	18.41	15.61
	- Landfilling	Tons	109.48	369.55	231.27	244.36
	- Other disposal operations	Tons	123.65	86.37	6.55	33.47
	Total weight of non-hazardous waste directed to disposal	Tons	52,664.94	22,406.17	13,711.61	2,413.55
	Onsite					
	- Incineration with energy recovery	Tons	0	0	45	36
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	1,468.61	1,829.71	12,441.88	350.25
	- Other disposal operations	Tons	0.5	11.36	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	411.80
	- Incineration without energy recovery	Tons	6.37	0.80	0.36	33.71
	- Landfilling	Tons	51,176.99	20,564.30	1,213.36	1,805.44
	- Other disposal operations	Tons	12.47	0	11.00	980.94
Farming business	Total weight of waste directed to disposal	Tons	0	8.12	9.01	9.45
	Total weight of hazardous waste directed to disposal	Tons	0	0	0	0.21
	Onsite					

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0.21
	- Other disposal operations	Tons	0	0	0	0
	Total weight of non-hazardous waste directed to disposal	Tons	0	8.12	9.01	9.24
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Landfilling	Tons	0	8.12	9.01	9.24
	- Other disposal operations	Tons	0	0	0	0
Sugar business	Total weight of waste directed to disposal	Tons	3,020,000.74	3,735,953.45	4,144,121.51	3,861,684.30
	Total weight of hazardous waste directed to disposal	Tons	175.00	4,054.77	169.50	417.65
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	1	0.93	0	0
	- Landfilling	Tons	0	1.33	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	74.41	282.43	16.80	289.19
	- Incineration without energy recovery	Tons	31.18	3,979.15	15.82	15.61
	- Landfilling	Tons	68.40	369.55	135.08	102.34
	- Other disposal operations	Tons	0	86.37	1.80	10.51
	Total weight of non-hazardous waste directed to disposal	Tons	3,019,825.75	3,731,898.68	4,143,952.01	3,861,266.65
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	1,457.23	1,679.00	387.27	301.19
	- Other disposal operations	Tons	0.50	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	2,967,995.05	3,729,704.93	4,142,943.51	3,860,345.66
	- Incineration without energy recovery	Tons	0	0.80	0.36	23.71
	- Landfilling	Tons	50,372.95	513.95	620.87	596.08
	- Other disposal operations	Tons	0.02	0	0	0
Energy business	Total weight of waste directed to disposal	Tons	323.64	19,997.11	324,998.51	149,683.69
	Total weight of hazardous waste directed to disposal	Tons	49.86	301.63	68.99	1,675.44
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	1,539.55
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	4.23	0	0
	- Other disposal operations	Tons	0	0.50	0	1.15
	Offsite					
	- Incineration with energy recovery	Tons	5.39	3.59	1.38	35.23
	- Incineration without energy recovery	Tons	3.61	0	2.59	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Landfilling	Tons	40.87	290.89	60.26	76.55
	- Other disposal operations	Tons	0	2.42	4.75	22.96
	Total weight of non-hazardous waste directed to disposal	Tons	273.78	19,695.48	324,929.53	148,008.25
	Onsite					
	- Incineration with energy recovery	Tons	0	0	312,578.29	145,627.00
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	11.39	4.54	12,030.02	49.06
	- Other disposal operations	Tons	0	11.36	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	404.05
	- Incineration without energy recovery	Tons	6.37	0	0	0
	- Landfilling	Tons	243.57	19,679.58	310.21	947.20
	- Other disposal operations	Tons	12.45	0	11.00	980.94
Wood substitute materials business	Total weight of waste directed to disposal	Tons	416.56	452.49	144.12	248.16
	Total weight of hazardous waste directed to disposal	Tons	361.15	362.79	0	0
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	238.74	278.84	0	248.16
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	122.41	83.95	0	0
	Total weight of non-hazardous waste directed to disposal	Tons	55.41	89.70	144.12	0
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	55.41	89.70	144.12	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Other disposal operations	Tons	0	0	0	0
Fertilizer business	Total weight of waste directed to disposal	Tons	19.10	28.52	40.01	100.69
	Total weight of hazardous waste directed to disposal	Tons	0.45	5.61	3.43	68.88
	Onsite					
	- Incineration with energy recovery	Tons	0	0.3	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	5.86
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0.21	5.31	3.43	63.02
	- Other disposal operations	Tons	0.24	0	0	0
	Total weight of non-hazardous waste directed to disposal	Tons	18.65	22.91	36.58	31.81
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Landfilling	Tons	0	0	15.59	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	18.65	22.91	20.99	31.81
	- Other disposal operations	Tons	0	0	0	0
Logistics and warehouse business	Total weight of waste directed to disposal	Tons	436.40	189.07	53.97	91.59
	Total weight of hazardous waste directed to disposal	Tons	0	0	32.40	0.22
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0.22
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	32.40	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Other disposal operations	Tons	0	0	0	0
	Total weight of non-hazardous waste directed to disposal	Tons	436.40	189.07	21.57	91.37
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	10.00
	- Landfilling	Tons	436.40	189.07	21.57	81.37
	- Other disposal operations	Tons	0	0	0	0
Other business	Total weight of waste directed to disposal	Tons	51.00	207.14	140.69	178.72
	Total weight of hazardous waste directed to disposal	Tons	1.00	0	0.10	2.98
	Onsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
	- Landfilling	Tons	0	0	0	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	0	0.10	2.24
	- Other disposal operations	Tons	1.00	0	0	0
	Total weight of non-hazardous waste directed to disposal	Tons	50.00	207.14	140.59	175.74
	Onsite					
	- Incineration with energy recovery	Tons	0	0	45.00	36.00
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	0	146.17	9	0
	- Other disposal operations	Tons	0	0	0	0
	Offsite					
	- Incineration with energy recovery	Tons	0	0	0	0
	- Incineration without energy recovery	Tons	0	0	0	0
	- Landfilling	Tons	50.00	60.97	86.59	139.74
	- Other disposal operations	Tons	0	0	0	0

Business Unit	Waste to Disposal	Unit	2021	2022	2023	2024
CSA 2.4.2 Waste Disposal						
Mitr Phol Group	Total waste recycled/reused	Tons	3,062,560.96	2,089,874.73	2,308,402.94	2,344,773.42
	Total waste disposed	Tons	53,252.39	27,130.96	13,986.01	6,031.69
	- Waste landfilled	Tons	52,755.08	22,769.12	13,886.51	2,400.05
	- Waste incinerated with energy recovery	Tons	318.53	282.73	63.18	2,566.76
	- Waste incinerated without energy recovery	Tons	42.16	3,980.88	18.77	49.32
	- Waste otherwise disposed	Tons	136.62	98.23	17.55	1,015.56
	Target of total waste disposed	Tons			26,045.72 (Reduced 4% from 2022)	24,960.48 (Reduced 8% from 2022)
	Data coverage	% of revenue	100	100	100	100

Remarks:

1. The waste disposal data was sourced from information provided by waste management operators and the disposal reports submitted to government authorities.
2. Other recovery operations include repurposing, sorting for sale and anaerobic digestion treatment.
3. Other disposal methods include waste stabilization and other treatment.
4. Total waste disposal excludes waste from one company that is utilized by other companies within the group. Examples include bagasse from the sugar business, which is sent as fuel to the energy business; filter cake from the sugar business, which is sent as soil conditioner to the fertilizer business or used within the factory; ash from the power plant, which is sent as soil conditioner to the farming business; and vinasse from the ethanol business, which is sent as raw material in the fertilizer business.

5. In 2024, the classification of hazardous waste has been adjusted. Previously, waste with disposal codes 041 (Utilization as fuel substitution or combustion for energy recovery) and 042 (Fuel blending) was classified under the category "Waste Diverted from Disposal – Recycling." However, it has now been reclassified under the category "Waste Directed to Disposal – Incineration with Energy Recovery."

Non-compliance with Environmental Laws and Regulations

Business Unit	Non-compliance with Environmental Laws and Regulations	Unit	2021	2022	2023	2024
GRI 2-27 (2021) Compliance with Laws and Regulations/ CSA 2.2.4 Environmental Violations/ CSA 2.10.7 Business Impacts of Water Related Incidents						
Mitr	Number of cases for significant fines for non-compliance with laws and regulations (> 10,000 USD)	Cases	0	0	0	0
Phol	Significant fines for non-compliance with laws and regulations (> 10,000 USD)	Baht	0	0	0	0
Group	Number of non-monetary sanctions	Cases	0	0	0	0
	Number of cases brought through dispute resolution mechanism	Cases	0	0	0	0

Packaging

Business Unit	Packaging	Unit	2021	2022	2023	2024	Target for 2024
CSA 2.3.2 Packaging Materials							
Mitr Phol Group	Recycled and/or certified paper packaging	% of total weight of paper packaging			93.84	94.10	94
	Data coverage	% of cost of goods sold			100	100	
	Recycled and/or certified glass packaging	% of total weight of glass packaging				100	100
	Data coverage	% of cost of goods sold				100	
CSA 2.3.3 Plastic Packaging							
Mitr Phol Group	Total weight of all plastic packaging	Tons	5,500	6,599	7,272	7,760	7,800
	Recyclable plastic packaging	% of total weight of all plastic packaging	94.50	94.50	94.73	94.20	94
	Compostable plastic packaging	% of total weight of all plastic packaging	0.007	0.001	0.003	0.002	0.002
	Recycled content within plastic packaging	% of total weight of all plastic packaging	0	0	0	0.036	0.03
	Data coverage	% of cost of goods sold	100	100	100	100	

Food Loss & Waste

Business Unit	Packaging	Unit	2021	2022	2023	2024	Target for 2024
CSA 2.4.4 Food Loss & Waste Impact							
Mitr Phol Group	Total food loss & waste	Tonnes	372,299.32	460,521.68	424,690.27	386,792.26	362,731.06
	Total food loss & waste used for alternative purposes	Tonnes	264,025.65	312,469.71	266,206.82	324,068.60	242,952.64
	Total food loss & waste, which is undetermined loss	Tonnes	108,273.66	148,051.97	158,483.45	62,723.65	119,778.42
	Total food loss & waste per weight of sugar sales	Tonnes/ Tonnes sugar sales	0.222	0.196	0.180	0.184	0.201
	Data coverage	Total weight of sugar sales	100	100	100	100	

Remarks: Food loss & waste used for alternative purposes includes sugar loss in bagasses used for biomass energy, sugar loss in molasses used for ethanol production, sugar loss in filter cake used for fertilizer, and deteriorated sugar that are reprocessed.

Food loss & waste, which is undetermined loss e.g., loss into condensate, inversion loss by microorganisms or heat, etc.

Environmental Performance Intensity for Sugar Business

Environmental Performance		Unit	2021	2022	2023	2024
Sugar Business	Direct GHG emissions (Scope 1)	Tons CO ₂ e/ ton of raw sugar			0.0301	0.0357
	Energy indirect GHG emissions (Scope 2)	Tons CO ₂ e/ ton of raw sugar			0.0433	0.0494
	Energy consumption	MJ/ ton of raw sugar			11,673	13,066