

Green House Gas Performance							
ESG metrics	GRI STANDARD	List	Unit	2021	2022	2023	2024
	GRI305-1	Direct greenhouse gas emission from the production process (scope 1)			base year		
		Direct greenhouse gas emission from the production	tCO2e	46,329	60,846	52,613	39,568
		- Carbon dioxide (CO2)	tCO2e	24,993	23,083	29,931	32,751
		- Methane (CH4)	tCO2e	20,854	37,006	21,009	5,790
		- Nitrous oxide (N2 O)	tCO2e	424	440	453	441
		- HFCs leakage	tCO2e	57	241	1,106	334
	Separate report	- Carbon dioxide from biogenic (Biogenic CO2)	tCO2e	-	76	113	252
		- Other Biogenic	tCO2e	42	184,116	187,491	230,121
		- R22 leakage	tCO2e	179,956	-	-	-
	GRI305-2	Indirect greenhouse gas emission from electricity, steam, and biogas purchase (scope 2)					
		Indirect greenhouse gas emission from electricity,	tCO2e	18,446	22,046	22,932	22,195
		- Carbon dioxide (CO2)	tCO2e	18,446	22,046	22,932	22,195
		- Methane (CH4)	tCO2e	0	0	0	0
		- Nitrous oxide (N2 O)	tCO2e	0	0	0	0
		- Carbon dioxide from biogenic (Biogenic CO2)	tCO2e	0	0	0	0
		- Other Biogenic	tCO2e	0	0	0	0
E5.2C		Total greenhouse gas emission (scope 1+2)					
		Total greenhouse gas emission (scope 1+2)	tCO2e	64,775	82,892	75,545	61,763
	GRI305-3	Other related indirect greenhouse gas emission (scope 3)					
		Other related indirect greenhouse gas emission	tCO2e	N/A	258,691	328,207	424,024
		Upstream	tCO2e	N/A	254,900	323,121	416,354
		- Cat.1 Product and service purchase (raw material	tCO2e	N/A	240,231	303,989	389,138
		- Cat.4 Upstream product transportation and distribution (raw material transportation)	tCO2e	N/A	12,687	17,304	24,293
		- Cat.4 Waste transportation	tCO2e	N/A	1,982	1,827	2,900
		- Cat.6 Business travel	tCO2e	N/A	-	-	-
		- Cat.7 Employee's commuting between home and workplace	tCO2e	N/A	-	-	-
		Downstream	tCO2e	N/A	3,791	5,086	7,669
		- Cat.9 Downstream product transportation and distribution (product transportation)	tCO2e	N/A	3,791	5,086	5,660
E5.5R		Total greenhouse gas emission (scope 1+2+3)					
		Total greenhouse gas emission (scope 1+2+3)	tCO2e	N/A	341,583	403,752	485,787
		Separate greenhouse gas emission by establishment					
		Total direct greenhouse gas emission from the	tCO2e	46,329	60,846	52,613	39,568
		Total direct greenhouse gas emission from the	tCO2e	18,446	22,046	22,932	22,195
		Total other related indirect greenhouse gas emission	tCO2e	N/A	258,691	328,207	422,091
		BBGI Public Company Limited Head Office					
		Direct greenhouse gas emission from the production	tCO2e	N/A	8	11	10
		Direct greenhouse gas emission from the production	tCO2e	N/A	48	49	59
		Other related indirect greenhouse gas emission (scope 3)	tCO2e	N/A	1	2	3

ESG metrics	GRI STANDARD	List	Unit	2021	2022	2023	2024
		BBGI Biodiesel Company Limited			base year		
		Direct greenhouse gas emission from the production	tCO ₂ e	25,222	26,774	32,850	34,632
		Direct greenhouse gas emission from the production	tCO ₂ e	8,581	9,118	10,682	9,298
		Other related indirect greenhouse gas emission (scope 3)	tCO ₂ e	N/A	208,294	284,538	322,468
		BBGI Bioethanol (Chachoengsao) Company Limited					
		Direct greenhouse gas emission from the production	tCO ₂ e	1,100	1,169	1,203	1,144
		Direct greenhouse gas emission from the production	tCO ₂ e	8,680	9,244	8,852	9,107
		Other related indirect greenhouse gas emission (scope 3)	tCO ₂ e	N/A	13,471	8,745	6,592
		BBGI Bioethanol Public Company Limited (Bo Ploi)					
		Direct greenhouse gas emission from the production	tCO ₂ e	19,432	19,519	148	141
		Direct greenhouse gas emission from the production	tCO ₂ e	3,560	733	1,153	787
		Other related indirect greenhouse gas emission (scope 3)	tCO ₂ e	N/A	N/A	33,736	31,069
		BBGI Bioethanol Public Company Limited (Nam Phong)					
		Direct greenhouse gas emission from the production	tCO ₂ e	488	24,073	13,261	1,560
		Direct greenhouse gas emission from the production	tCO ₂ e	452	1,571	1,770	2,424
		Other related indirect greenhouse gas emission (scope 3)	tCO ₂ e	N/A	3,169	3,882	35,461
		BGI Utility and Power Company Limited (Bo Ploi)					
		Direct greenhouse gas emission from the production	tCO ₂ e	-	8,637	4,904	1,456
		Direct greenhouse gas emission from the production	tCO ₂ e	-	30	51	-
		Other related indirect greenhouse gas emission (scope 3)	tCO ₂ e	-	20	326	76
		BGI Utility and Power Company Limited (Nam Phong)					
		Direct greenhouse gas emission from the production	tCO ₂ e	-	-	194	52
		Direct greenhouse gas emission from the production	tCO ₂ e	-	-	-	-
		Other related indirect greenhouse gas emission (scope 3)	tCO ₂ e	-	-	7	7
E5.6R	GRI305-4	Greenhouse gas emission ratio per product unit					
		BBGI Biodiesel Company Limited	tCO ₂ e/mil. Litre	135	163	150	127
		BBGI Bioethanol (Chachoengsao) Company Limited	tCO ₂ e/mil. Litre	202	227	209	188
		BBGI Bioethanol Public Company Limited (Bo Ploi)	tCO ₂ e/mil. Litre	220	42	34	22
		BBGI Bioethanol Public Company Limited (Nam Phong)	tCO ₂ e/mil. Litre	23	562	345	76
		BGI Utility and Power Company Limited (Bo Ploi)	tCO ₂ e/mil. Nm ³	-	1,293	745	85
		BGI Utility and Power Company Limited (Nam Phong)	tCO ₂ e/mil. Nm ³	-	-	38	4

Note

1. Greenhouse gas account reporting scope of BBGI Public Company Limited Group 2024 covers company groups as follow:

- 1.1. BBGI Public Company Limited Head Office
- 1.2. BBGI Bioethanol Public Company Limited
- 1.3. BBGI Bioethanol (Chachoengsao) Company Limited
- 1.4. BBGI Biodiesel Company Limited
- 1.5. BBGI Utility and Power Company Limited

2. Greenhouse gas report, scope 1 and 2, calculated from the Company's calculation tool, which uses IPCC 2006 calculation principle.

3. Greenhouse gas emission scope 1 calculation uses emission factors from IPCC 2006 and the API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry 2009

4. Greenhouse gas emission scope 2 calculation uses emission factors of electricity consumption from the Energy Policy and Planning Office, Ministry of Energy.

5. Greenhouse gas emission scope 3 calculation uses emission factors according to TGO's database, with reference to Thai National LCI Database, TIIS-MTEC-NSTDA.

6. Greenhouse gas emission reporting scope 3 in 2022 reports 3 categories based on the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, i.e.

Category 1: Purchased goods – raw materials

Category 4:Transportation of raw materials

Category 9:Transportation of products

Category 9:Transportation of waste

7. Fuel to energy conversion uses calorific value from the Department of Alternative Energy Development and Efficiency.

8. Since 2022 Global Warming Potentials (GWP) uses IPCC Fifth Assessment Report (AR5) values from the Greenhouse Gas Protocol.

9. Gases included in the calculation are CO₂, CH₄, N₂O.

10. GHG Intensity is calculated from Scope 1 and Scope 2 only.

11. BBGI Public Company Limited Group has disclosed greenhouse gas account report covering the scope of operations in every business group. The verification results are verified and certified by Third-party in 2022. Therefore, 2022 is the base year.