Alltop Technology (Vietnam) Co., Ltd.

Year 2024

Greenhouse Gas Inventory Report

Report Date: 2025/10/01

Version: 0.0.4

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Chapter 1 Company Overview

1.1 Preface

The intensification of global climate change has prompted international efforts to mitigate the potential consequences of excessive greenhouse gas (GHG) emissions. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted as a global declaration to regulate anthropogenic GHG emissions. To operationalize efforts in controlling GHG emissions, an additional milestone was reached in 1997 when the Kyoto Protocol was signed in Japan. This protocol further elucidated the potential climate change and impacts associated with excessive GHG emissions, making it a significant and universally recognized environmental concern and collective responsibility worldwide.

Alltop Technology (Vietnam) Co., Ltd deeply recognizes the understanding that GHG emissions contribute to global climate change, subsequently impacting the environment and ecosystems. Therefore, Alltop Technology (Vietnam) Co., Ltd, as responsible members of the global community, are committed to fulfilling our corporate social responsibility and duty to protect the Earth and promote sustainable practices. We are dedicated to GHG emissions inventory and control, with the goal of mitigating the exacerbation of global warming. We also aim to achieve energy conservation and contribute to the sustainable development of the global ecological environment.

1.2 Company Profile

Alltop Technology(Vietnam) Co., Ltd. was established in June 2023 as a wholly owned subsidiary of Alltop Technology Co.,Ltd.

Main business: Manufacturing and sales of high-power, high-frequency connectors. In the future, the company plans to expand into the production of automotive connectors, supplying customers in Vietnam and Southeast Asia.

1.3 Greenhouse Gas Policy Statement

As a responsible corporate citizen, the Company attaches great importance to energy resource utilization and environmental impact management. In fulfillment of its corporate responsibility, the Company is committed to effectively monitoring and managing its greenhouse gas emissions. Based on the results of the greenhouse gas inventory, the Company will further promote energy conservation and carbon reduction initiatives, with the goal of reducing greenhouse gas emissions and contributing to environmental sustainability.

1.4 Organizational Structure for GHG Inventory Implementation

To ensure the effective execution of greenhouse gas inventory, the establishment of reduction targets, and the formulation of reduction strategies, the Company has established a Greenhouse Gas Inventory Task Force following review and approval by senior management. Members from each department are designated to undertake responsibilities and tasks in accordance with their respective functions. The organizational structure of the Task Force is presented in **Figure 1**.

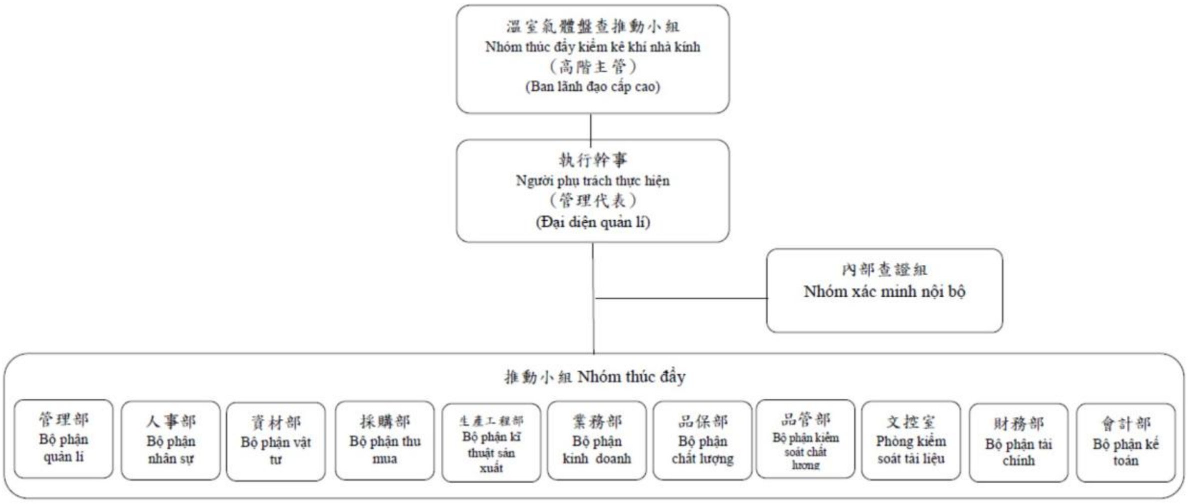

Figure 1 Organizational Structure of the Greenhouse Gas Inventory Task Force

1.5 Basis for the Preparation of this Report

This report has been prepared in accordance with the requirements of ISO 14064-1:2018 standard.

1.6 Purpose of the Report

The reporting period of this Report covers the period from 2024/01/01 to 2024/12/31. The scope of the GHG inventory encompasses all greenhouse gas emissions generated within the organizational boundaries of the Company's facilities. In the event of any future changes, this Report will be revised accordingly and reissued.

This Report is prepared annually, with the GHG inventory work for the previous year commencing in January, and the drafting of this Report beginning in April. The Report encompasses a summary of GHG emissions for the previous year within the Company and serves as a reference for the current year and the next year until new reports are completed.

The purposes and intended uses of this Report are as follows:

a. To present the Company's GHG inventory results.
b. To properly document the Company's GHG emissions inventory, thereby supporting future verification or assurance requirements and serving as substantiating evidence for potential participation in domestic or international emissions credit trading schemes.

The intended users of this Report are: competent authorities, customers, and group companies.

Chapter 2 Inventory Boundary Setting

2.1 Organizational Boundary Setting

The organizational boundary for this Report encompasses 1 locations within Alltop Technology (Vietnam) Co., Ltd, as specified in Table 1. This includes direct GHG emissions and removals, as well as indirect GHG emissions identified as significant.

The boundary is defined using the “Operational Control” approach. All emission sources within the Company’s scope are fully owned, and facility-level GHG emissions and removals are aggregated in accordance with this method.

Table 1 Scope of Organizational Boundaries

Organization Name	**Area / Location**	**Organization Address**
Alltop Technology (Vietnam) Co., Ltd	Hai Phong City, Vietnam	Factory FA5-3, Lot 7, Cam Dien - Luong Dien Industrial Park, Cam Giang Commune, Hai Phong City , Viet Nam

Figure 2 Organizational Boundary Aerial View

The GHG emission timeframe covered by this report is year 2024/01/01 ~ 2024/12/31.

2.2 Changes in Organizational Boundary

If there are any changes to the Company's boundary, this Report will be revised accordingly and reissued.

2.3 Reporting Boundary and Changes

The reporting boundary of the Company is determined after completing the organizational boundary setting. It involves further identification and inventory of all emission sources within the geographical boundary and distinguishes between direct and indirect emission sources. This is done to clearly define our company's reporting boundary and manage the risks and opportunities associated with GHG emissions. If there is a need to exclude certain emission sources within the boundary, explanations for such exclusions will be provided in subsequent reports.

The reporting boundary includes:

- Category 1: Direct GHG emissions and removals
- Category 2: Indirect GHG emissions from imported energy
- Category 3: Indirect GHG emissions from transportation

 Category 4: Indirect GHG emissions from products or services used by an organization

The coverage of emission sources by category is detailed in Table 2.

Table 2 Identification of Greenhouse Gas Emission Sources

Factory Name	**Equipment**	**Raw Material or Product**	**Emission Source Data**		**GHG Generated**						
Name	Name	Name	Category	Emission Type	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	NF_3
Alltop Technology (Vietnam) Co., Ltd	Ford/Territory 1.5	Road transport gasoline KgCO2e/L	Category 1	Mibile (T)	√	√	√				
Alltop Technology (Vietnam) Co., Ltd	Manure Management (Total Personnel Hours)	Methane	Category 1	Fugitive (F)		√					
Alltop Technology (Vietnam) Co., Ltd	Industrial temperature controller	R-23	Category 1	Fugitive (F)				√			
Alltop Technology (Vietnam) Co., Ltd	Split type air conditioner	R-32	Category 1	Fugitive (F)				√			
Alltop Technology (Vietnam) Co., Ltd	Dehumidifier	R-134a	Category 1	Fugitive (F)				√			
Alltop Technology (Vietnam) Co., Ltd	Company vehicle	R-134a	Category 1	Fugitive (F)				√			
Alltop Technology (Vietnam) Co., Ltd	Industrial temperature controller	R-407C	Category 1	Fugitive (F)				√			
Alltop Technology (Vietnam) Co., Ltd	Dehumidifier	R-410A	Category 1	Fugitive (F)				√			
Alltop Technology (Vietnam) Co., Ltd	Household refrigerator	R-600a	Category 1	Fugitive (F)							
Alltop Technology (Vietnam) Co., Ltd	WD-40	CO2(Carbon dioxide)	Category 1	Programmed (P)	√						
Alltop Technology (Vietnam) Co., Ltd	Electricity (outsourcing)	Electricity consumption	Category 2	Purchased Electricity	√						
Alltop Technology (Vietnam) Co., Ltd	Employee Commuting (Auto - Gasoline)	Employee Commuting	Category 3	N/A	√						
Alltop Technology (Vietnam) Co., Ltd	Employee Commuting (Motorcycle - Gasoline)	Employee Commuting	Category 3	N/A	√						

Factory Name	Equipment	Raw Material or Product	Emission Source Data		GHG Generated						
Name	Name	Name	Category	Emission Type	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	NF_3
Alltop Technology (Vietnam) Co., Ltd	Domestic Waste	Waste Disposal	Category 4	N/A	√						
Alltop Technology (Vietnam) Co., Ltd	Upstream emissions of purchased energy (34A-751.57)	Upstream emissions of purchased energy	Category 4	N/A	√						
Alltop Technology (Vietnam) Co., Ltd	Upstream emissions of purchased electricity (PM17000098055)	Upstream emissions of purchased electricity	Category 4	N/A	√						

2.4 Explanation of Significance Assessment for Indirect Emissions (Categories 2–6)

For the significance assessment of Category 2 to Category 6 GHG emissions in accordance with ISO 14064-1:2018, the Company considers the following assessment factors: Company Requirements 、Regulatory or sector-specific requirements 、Emissions 、Control ability 、Employee Engagement. A significance assessment criterion for indirect GHG emissions has been established, whereby any indirect emissions scoring above 150 are deemed significant and are therefore required to be included in the GHG inventory. All results from the assessment of significant indirect emissions must be disclosed in the inventory. Category 2 emissions are always considered mandatory for inclusion in the GHG inventory.

Table 3 Significance Assessment of Greenhouse Gas Risks

Evaluate factor									
Life Cycle Stage	Category	GHG evaluate item	Company Requirements	Regulatory or sector-specific requirements	Emissions	Control ability	Employee Engagement	Score	Significance Threshold Score: 150 points
Operation, Support and Service Phase	Category2	Input Power	10	10	10	5	1	5000	Significance
Operation, Support and Service Phase	Category3	Employee Commuting	5	5	1	3	5	375	Significance
Operation, Support and Service Phase	Category3	Employee Commuting	5	5	5	3	5	1875	Significance
Raw Material Acquisition	Category4	Upstream emissions of purchased electricity	5	5	5	5	1	625	Significance
Raw Material Acquisition	Category4	Upstream emissions of purchased energy	5	5	1	5	5	625	Significance
Operation, Support and Service Phase	Category4	Waste Disposal	5	5	1	3	5	375	Significance

Chapter 3 Greenhouse Gas Emissions Report

3.1 Greenhouse Gases

The term “greenhouse gases” refers to the seven GHGs defined under ISO 14064-1, including Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur Hexafluoride (SF_6), and Nitrogen Trifluoride (NF_3). The scope of this inventory encompasses all anthropogenic emissions from these gases as well as the removal of each greenhouse gas sink.

Additionally, Hydrochlorofluorocarbons (HCFCs) and Chlorofluorocarbons (CFCs), although classified as greenhouse gases, contribute to ozone layer depletion and are therefore regulated under the Montreal Protocol; these substances are disclosed separately in this report.

We also reported direct non-major GHG emissions of 0.0000 tonnes ofCO_2e in 2024.

1. Hydrocarbons(HCs): 0.0000 TonCO_2e.

The GWP values of fluorinated mixed greenhouse gases are allocated to the respective categories based on the UN Environment Programme classification, according to the category contributing the highest proportion of GWP.

3.2 Total GHG Emissions

In the reporting year 2024 , the total greenhouse gas emissions of the Company, including Category 1, Category 2, and significant Categories 3–6, amounted to 125.399 tCO_2e. The complete inventory of greenhouse gas emissions is presented in Table 4.

During the inventory period 2024/01/01 ~ 2024/12/31, direct greenhouse gas emissions totaled 4.9530 tCO_2e, representing 3.95 % of the total company emissions. Indirect greenhouse gas emissions amounted to 120.4462 tCO_2e, accounting for 96.05 % of the total company emissions.

Table 4 Greenhouse Gas Emission Inventory

Recommended Format for Combined GHG Emission Statement (for reference only)

Reporting Organization	Name	Alltop Technology (Vietnam) Co., Ltd		
Reporting Responsible Personel or Entity	Name	阮氏惠 Nguyễn Thị Huế		
Reporting Year	From	2024/01/01	to	2024/12/31

EMISSIONS			Carbon Dioxide Equivalent TOTAL 125.399	tCO2e	CO2	CH4	N2O	HFCs	PFCs	SF6	NF3	Other	Quantitative Uncertainty	Qualitative Uncertainty
				GWP	1	27.9	273	3~14600	1~18500	24300	17400			
1	**Category 1: Direct GHG emissions and removals (tCO2e(1))**	3.950%	**4.9530**		**0.9237**	**1.7100**	**0.0117**	**2.3077**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		
1.1	Direct emissions from stationary combustion	0.00%	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
1.2	Direct emissions from mobile combustion	0.76%	0.9476		0.9237	0.0123	0.0117	0.0000	0.0000	0.0000	0.0000	0.0000		
1.3	Direct process emissions and removals from industrial processes	0.00%	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
1.4	Direct fugitive emissions from the release of GHGs in anthropogenic systems	3.19%	4.0054		0.0000	1.6978	0.0000	2.3077	0.0000	0.0000	0.0000	0.0000		
1.5	Direct emissions and removals from land use, land use change and forestry	0.00%	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	Direct emissions from biogenic materials (tCO2)	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
	Biogenic material combustion		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
	Indirect GHG Emission (tCO2e(2))	S/NS[*]	**120.4462**									
2	**Category 2: Indirect GHG emissions from imported energy (4)**	74.893%	93.9156	0.00%								
2.1	Indirect emissions from imported electricity	S		93.9156								
2.2	Indirect emissions from imported energy	NS		0								
3	**Category 3: Indirect GHG emissions from transportation**	9.364%	11.7418									
3.1	Emissions from upstream transport and distribution for goods	NS		0.0000								
3.2.1	Emissions from downstream transport and distribution for goods	NS		0.0000								
3.2.2	Emissions from waste	NS		0.0000								
3.3	Emissions from employee commuting	S		11.7418								A
3.4	Emissions from client and visitor transport	NS		0.0000								
3.5	Emissions from business travel	NS		0.0000								
4	**Category 4: Indirect GHG emissions from products used by an organization**	11.793%	14.7889									
4.1	Emissions from purchased goods	NS		0.0000								
4.1b, 4.1b2	Emissions from purchased energy	S		14.0966								A
4.2	Emissions from capital goods	NS		0.0000								
4.3	Emissions from the disposal of solid and liquid waste	S		0.6923								A
4.4	Emissions from the use of assets	NS		0.0000								
4.5	Emissions from the use of services that are not described in the above subcategories (consulting, cleaning, maintenance, mail delivery, bank, etc.)	NS		0.0000								
4.7	Water Usage			0.0000								
5	**Category 5: Indirect GHG emissions associated with the use of products from the organization**	0.00%	0.0000									
5.1	Emissions from the use stage of the product	NS		0.0000								
5.2	Emissions from downstream leased assets	NS		0.0000								
5.3	Emissions from end of life stage of the product	NS		0.0000								
5.4	Emissions from investments	NS		0.0000								
6	**Category 6: Indirect GHG emissions from other sources**	0.00%	0.0000									
6.1		NS										
6.2		NS										

Removal (5)

Direct removal (tCO2e)	NS

Storage (6),(7),(8)

Storage at end of year (tCO2e)	NS

Carbon financial instruments (9)

Total purchased renewable energy electricity (kWh)	0	kWh
Purchased renewable energy electricity (kWh) when the contractual instruments comply with ISO 14064-1 Annex E		kWh
Purchased renewable energy electricity (kWh) when the contractual instruments comply with ISO 14064-1 Annex E		kWh
Purchased renewable energy electricity (kWh) when the contractual instruments comply with ISO 14064-1 Annex E		kWh
Purchased renewable energy electricity (kWh) when the contractual instruments do not comply with ISO 14064-1 Annex E		kWh
GHG Offset Project AA (tCO2e)		CO2e
GHG Offset Project BB (tCO2e)		CO2e

Market-based emission factors comply with ISO 14064-1 Annex E		
gCO2e/kWh	tCO2e	See attached document
gCO2e/kWh	tCO2e	See attached document
gCO2e/kWh	tCO2e	See attached document

Other Information

Performance tracking (Measurement for emissions and removals, e.g., annual revenue per year (tCO2e))	none
GHG emissions, removals, and storage of base year; adjustments of base year	none
Disclosing the most significant sources, sinks, and reservoir	none
Statement of emissions per unit (CO2e)	none

Statement of GHG reduction initiative	none
Significance criteria	See GHG Risk Assessment Table
Uncertainty assessment	See GHG Risk Assessment Table
Notes	

[*]S: significant / NS: not significant

Chapter 4 Base Year Setting and Inventory Changes

4.1 Selection of Base Year

The Company has designated 2024 as the base year for the greenhouse gas inventory, with total greenhouse gas emissions of 125.399 tCO_2e. Rationale for Selection: In accordance with the provisions of ISO 14064-1:2018, the greenhouse gas emission activities within the boundary over the past 2024 years were evaluated. The inventory was conducted with the assistance of external experts, establishing a systematic procedure to ensure high data accuracy and reliability, thereby guaranteeing the credibility of the inventory results.

4.2 Changes to the Base Year

The Company shall review and update the base year inventory if any of the following circumstances occur:

a. Changes to the reporting or organizational boundary (e.g., mergers, acquisitions, or divestitures)
b. Changes in calculation methods or emission factors
c. Discovery of single or cumulative errors that are material

If the Company's greenhouse gas inventory identifies single or cumulative errors with material discrepancies exceeding 5% , or if changes in organizational boundaries, quantification methods, or data errors result in a total emission variation greater than 3%, the base year shall be recalculated.

For individual emission sources whose contribution is below the threshold of 0.5%, the emissions from the first year or the most recent year may be used according to the simplified quantification principle. Such sources shall not be removed from the inventory, and the sum of all simplified quantified emissions shall not exceed the materiality threshold.

4.3 Mitigation Activities

In order to reduce or prevent direct greenhouse gas emissions, the Company implements mitigation initiatives in alignment with governmental guidance and supply chain emission reduction requirements. The Company considers regulatory requirements, technological feasibility, and financial conditions to plan and implement feasible mitigation activities aimed at reducing greenhouse gas emissions or enhancing greenhouse gas removals.

Chapter 5 Greenhouse Gas Quantification

5.1 Quantification Method

The Company follows an emissions factor hierarchy, prioritizing the use of coefficients derived from measurements or mass balance calculations. If such coefficients are not available, we then turn to national coefficients or those from outside the national region. If no applicable emissions coefficients are found, we resort to internationally recognized coefficients.

The calculation formula for GHG emissions for various emission sources and sinks is as follows:

GHG Emissions = Activity Data × Emission Factor × Global Warming Potential (GWP)

Each responsible unit of the Company identifies greenhouse gas emission sources and investigates the equipment or processes within its scope of responsibility, in accordance with the Greenhouse Gas Inventory Management Procedure.

5.1.1 Calculation Formulae for Direct GHG Emissions (Category 1)

(1) Calculation of CO_2, CH_4, and N_2O emissions from gasoline consumed by company owned vehicles:
CO_2, CH_4, and N_2O Emissions = Gasoline Annual Usage × Emission Factor × GWP
Gasoline Annual Usage = Quantity Purchased

(2) Calculation of CH_4 emissions from the septic tank:
CH_4 emissions = Annual Emissions-Person Hours × Septic Tank Emission Factor × Unit Conversion × GWP
- Annual emissions-person hours: Total person-hours, including employees (direct + indirect), Employees- workers are calculated based on actual working hours,
- Septic Tank Emission Factor = Wastewater Flow Per Person Per Hour × Wastewater Concentration × BOD Emission Factor × Septic Tank Treatment Efficiency
- Unit Conversion = (10^-6 kg/mg)

(3) Calculation of GHG emissions from fire extinguishers:
CO_2 Fire Extinguisher Emissions = Annual Usage × Emission Factor × GWP

(4) Calculation of HFCs emissions from refrigerant: CO_2 Emissions = Annual Refilled Refrigerant × Refrigerant Emission Factor × Emission Factor × GWP

Table 5 Emission Factors for Refrigeration and Air-Conditioning Systems

	Equipment	Emission Factors (%)*	End-of-Life Emission Recovery Efficiency (%)
Reference Coefficient	Domestic Refrigeration	$0.1 \leqq x \leqq 0.5$	70
	Stand-alone Commercial Applications	$1 \leqq x \leqq 15$	70
	Medium & Large Commercial Refrigeration	$10 \leqq x \leqq 35$	70
	Transport Refrigeration	$15 \leqq x \leqq 50$	70
	Industrial Refrigeration including Food Processing and Cold Storage	$7 \leqq x \leqq 25$	90
	Chillers	$2 \leqq x \leqq 15$	95
	Residential and Commercial A/C, including Heat Pumps	$1 \leqq x \leqq 10$	80
	Mobile A/C	$10 \leqq x \leqq 20$	50

* Reference: 2006 IPCC Guidelines for National Greenhouse Gas Inventories

	Equipment	Refrigeration and Air-Conditioning Systems (Details)	Emission Factors (%)
Custom Coefficient	Domestic Refrigeration	Household Refrigeration Equipment	0.3
		Household Refrigerators	
		Water Dispensers	
	Stand-alone Commercial Applications	Stand-alone Commercial Refrigeration	8
		Restaurant Refrigeration	
	Medium & Large Commercial Refrigeration	Medium and Large Refrigeration	22.5
	Transport Refrigeration	Refrigeration for Transportation	32.5
	Industrial Refrigeration including Food Processing and Cold Storage	Industrial Refrigeration Equipment	16
		Industrial Temperature Controllers	
		Constant Temperature and Humidity Machines	
	Chillers	Chillers	8.5
	Residential and Commercial A/C, including Heat Pumps	Residential and Commercial Air Conditioners	5.5
		Split Type Air Conditioners	
		Dehumidifiers	
	Mobile A/C	Company Vehicles	15
		Portable Air Purifiers	

5.1.2 Calculation Formulae for Energy Indirect GHG Emissions (Category 2)

Calculation of CO_2 emissions from electricity:

CO_2 Emissions = Annual Electricity Consumption × Emission Factor × GWP

Annual Electricity Consumption = Self-Used Electricity Consumption

Self-used electricity consumption refers to the electricity bill from the power company.

5.1.3 Calculation Formulae for Significant Indirect GHG Emissions (Categories 3–6)

(1) Calculation of employee commuting emissions:

CO_2 Emissions = Number of employee working days × Commuting distance by each mode of transportation × Emission factor of each mode of transportation × GWP.

Emission Factor = Emission factor corresponding to each mode of transportation.

(2) Calculation of CO_2 emissions from international business travel (plane):

CO_2 Emissions = Data from the ICAO Carbon Emissions Calculator.

(3) Calculation of emissions from business travel:

CO_2 Emissions = Business travel distance × Emission factor of each transport mode × GWP

Emission Factor = Emission factor corresponding to each mode of transportation.

(4) Calculation of CO_2 upstream emissions associated with electricity production:

CO_2 Emissions = Annual Electricity Consumption × Emission Factor × GWP

(5) Calculation of CO_2 upstream emissions from the production of vehicle fuel (gasoline) purchased:

CO_2 Emissions = Annual Gasoline Usage × Emission Factor × GWP

(6) Calculation of CO2 emissions from domestic waste (Incineration):

CO_2 Emissions = Waste Output × Emission Factor × GWP

5.2 Data Quality Management

To ensure the accuracy of data quality, each responsible unit is required to specify the source of data, such as purchase records, flow meter records, measurement instrument records, usage records, or computer database reports. All evidence that can validate and substantiate the reliability of the data shall be reviewed and retained by the responsible units for future verification and traceability.

The error levels of emission source data are assessed based on the methods used to obtain activity data and emission factors, with evaluation criteria shown in Table 6. Data quality is classified into three levels: Level 1 represents higher data quality, Level 2 represents medium data quality, and Level 3 represents lower data quality. The overall evaluation results are presented in Table 7, and detailed scoring criteria are provided in Table 8.

Table 6 Rating Criteria for Data Quality of Emission Sources

Activity Data Type Grade/Score (A1)	1 / Data obtained from automated continuous measurement	2 / Data obtained from intermittent measurement	3 / Data estimated by self-assumption
Emission Factor Source Grade/Score (A2)	1 / Derived from direct measurement or mass balance calculation	3 / Provided by manufacturer	5 / Based on data from neighboring countries
	2 / Based on similar process/equipment experience	4 / Based on regional/national data	6 / Based on international databases

Table 7 Overall Evaluation Results of Data Quality for Emission Sources

Average	**Level**
2.65	Level 1
Rating Criteria: Level 1 → 1 point <= Total Average < 4 points Level 2 → 4 points <= Total Average < 7 points Level 3 → 7 points <= Total Average < 10 points	

Table 8 Scoring Details of Data Quality for Emission Sources

Equipment	**Raw Fuel Material or Product Name**	**GHG Source/Sink Data**		**Data Error Levels of Emission Sources**		**Data Error Score for Each Source**		
		Category	GHG Emission Type	Activity Data Type (A1)	Emission Factor Source (A2)	（A1）	（A2）	Score
Company Vehicles – Vehicles Owned by the Company	Road transport gasoline KgCO2e/L	Category1	Transported (T)	Intermittent measurement	Based on regional/national data	2	4	4.0
WD-40	CO2(Carbon dioxide)	Category1	Programmed (P)	Intermittent measurement	Derived from direct measurement or mass balance calculation	2	1	1.0
Manure Management (Total Personnel Hours)	Septic tank	Category1	Fugitive (F)	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Industrial temperature controller	R-407C	Category1	Fugitive (F)	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Company vehicle	R-134a	Category1	Fugitive (F)	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Split type air conditioner	R-32	Category1	Fugitive (F)	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Dehumidifier	R-134a	Category1	Fugitive (F)	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Dehumidifier	R-410A	Category1	Fugitive (F)	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Electricity (outsourced)	Electricity (outsourced)	Category2	Purchased Electricity	Automated continuous measurement	Based on regional/national data	1	4	2.0
Employee Commuting (Auto - Gasoline)	Employee Commuting	Category3	N/A	Intermittent measurement	Based on data from neighboring countries	2	5	5.0

Equipment	Raw Fuel Material or Product Name	GHG Source/Sink Data		Data Error Levels of Emission Sources		Data Error Score for Each Source		
		Category	GHG Emission Type	Activity Data Type (A1)	Emission Factor Source (A2)	（A1）	（A2）	Score
Employee Commuting (Motorcycle - Gasoline)	Employee Commuting	Category3	N/A	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Domestic Waste	Waste Disposal	Category4	N/A	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Upstream emissions of purchased energy (34A-751.57)	Upstream emissions of purchased energy	Category4	N/A	Intermittent measurement	Based on data from neighboring countries	2	5	5.0
Upstream emissions of purchased electricity (PM17000098055)	Upstream emissions of purchased electricity	Category4	N/A	Automated continuous measurement	Based on data from neighboring countries	1	5	2.5

The Company adopts the principle of prioritizing emission factors derived from mass balance calculations. In the absence of such factors, national emission factors are applied. Where neither is available, applicable international emission factors are used. The emission factors adopted for this inventory are presented in Table 9.

Table 9 Emission Factors Management

Factory Name	Equipment	Fuel/Product	GHG	GWP	Emission Factor	Unit	Source
Alltop Technology (Vietnam) Co., Ltd	Ford/Territory 1.5	gasoline KgCO2e/L	CO_2	1	2.3804550000	L	Sở Tài Nguyên và Môi Trường Ministry of Natural Resources and Environment (Announcement, October 2022); Vietnam gasoline calorific value = 45.8 MJ/kg, Vietnam gasoline density = 0.75 kg/L
Alltop Technology (Vietnam) Co., Ltd	Ford/Territory 1.5	(customize)gasoline KgCO2e/L	CH_4	27.9	0.0011335500	L	
Alltop Technology (Vietnam) Co., Ltd	Ford/Territory 1.5	(customize)gasoline KgCO2e/L	N_2O	273	0.0001099200	L	
Alltop Technology (Vietnam) Co., Ltd	Manure Management (Total Work Hours)	Methane	CH_4	27.9	0.0007968750	Ton /person -hours	Announcement of “Greenhouse Gas Emission Factors” by the Taiwan Ministry of Environment on February 5, 2024
Alltop Technology (Vietnam) Co., Ltd	Industrial temperature controller	R-23	HFC_s	14600	N/A	Ton /Ton	IPCC_AR6_WGI_Chapter07_SM
Alltop Technology (Vietnam) Co., Ltd	Split type air conditioner	R-32	HFC_s	771	N/A	Ton /Ton	IPCC_AR6_WGI_Chapter07_SM

Factory Name	Equipment	Fuel/Product	GHG	GWP	Emission Factor	Unit	Source
Alltop Technology (Vietnam) Co., Ltd	Dehumidifier	R-134a	HFCs	1530	N/A	Ton /Ton	IPCC_AR6_WGI_Chapter07_SM
Alltop Technology (Vietnam) Co., Ltd	Company vehicle	R-134a	HFCs	1530	N/A	Ton /Ton	IPCC_AR6_WGI_Chapter07_SM
Alltop Technology (Vietnam) Co., Ltd	Industrial temperature controller	R-407C	HFCs	1908	N/A	Ton /Ton	IPCC_AR6_WGI_Chapter07_SM
Alltop Technology (Vietnam) Co., Ltd	Dehumidifier	R-410A	HFCs	2256	N/A	Ton /Ton	IPCC_AR6_WGI_Chapter07_SM
Alltop Technology (Vietnam) Co., Ltd	Household refrigerator	R-600a	Other	0	N/A	Ton /Ton	IPCC_AR6_WGI_Chapter07_SM
Alltop Technology (Vietnam) Co., Ltd	WD-40	CO2(Carbon dioxide)	CO_2	1	0.0083430000	bottle	Volume conversion (L) * Density (specific gravity) * CO_2 proportion, the CO_2 emissions per bottle used are: 1*(412/1000)*0.81*0.025=0.008343Kg
Alltop Technology (Vietnam) Co., Ltd	Electricity (Outsourcing)	Use of Electricity	CO_2	1	0.6592000000	kWh	BỘ TÀI NGUYÊN VÀ MÔI TRƯỜNGCỤC BIẾN ĐỔI KHÍ HẬU
Alltop Technology (Vietnam) Co., Ltd	Employee Commuting (Auto - Gasoline)	employee commuting	CO_2	1	0.1150000000	(pkm)	TWN MOENV Product CFP DB, Private passenger car (gasoline)
Alltop Technology (Vietnam) Co., Ltd	Employee Commuting (Motorcycle - Gasoline)	employee commuting	CO_2	1	0.0951000000	(pkm)	TWN MOENV Product CFP DB, Motorcycle (gasoline)
Alltop Technology (Vietnam) Co., Ltd	Domestic Waste	disposal of waste	CO_2	1	360.0000000000	(mt)	TWN MOENV Product CFP DB, Waste incineration service (Gangshan Refuse Incineration Plant), 2020's announce
Alltop Technology (Vietnam) Co., Ltd	Upstream emissions of purchased electricity (PM17000098055)	upstream imported electricity	CO_2	1	0.0973000000	kWh	TWN MOENV Product CFP DB, Indirect electricity carbon footprint (2021), 2023's announce
Alltop Technology (Vietnam) Co., Ltd	Upstream emissions of purchased energy (34A-751.57)	upstream imported energy	CO_2	1	0.6040000000	(L)	TWN MOENV Product CFP DB, Motor gasoline (unburnt, 2021), 2023's announce

5.3 Quantitative Assessment of Uncertainty

The Company's 2024 annual greenhouse gas emissions, categorized for conducting uncertainty analysis:

i. Quantitative assessment of GHG uncertainty: Calculated using activity data, emission coefficients and emission weighting ratios.

ii. Source of data for uncertainty of activity data: Electric Meter Inspection and Testing Technical Specification, Edition Number CNMV 46, 6th Edition, GHG Emission Factor Management Table, Version 6.0.4, activity data recommendations, and recommended values from IPCC AR6 report.

iii. Source of data for the uncertainty of the emission factor: The difference value provided in the TaiwanMinistry of Environment Greenhouse Gas Emission Factors Management Table (Announcement Version, February 5, 2024) and the recommended values in the IPCC 2006 report are used as the basis for the evaluation of the uncertainty of the coefficients.

The quantitative uncertainty assessment of the Company's greenhouse gas emission inventory, as presented in Table 10, provides an indication of uncertainty. It also serves as a reference to evaluate the reliability of data quality information, thereby supporting the achievement of continuous improvement objectives.

Table 10 Quantitative Uncertainty Assessment Criteria

Accuracy Level	Uncertainty of Sample Mean Values (95% Confidence Interval)
High	±5%
Good	±15%
Normal	±30%
Poor	± over 30%

Direct GHG Emissions – Category 1 Emission Results

Proportion of Uncertainty Assessed Emissions to Total Category 1~2 Emissions	Uncertainty of Direct Emission Sources (Category 1)	
	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
5.01%	-0.26%	0.26%

Direct GHG Emissions - Stationary Source Emission Results

Proportion of Uncertainty Assessed Emissions to Total Category 1~2 Emissions	Uncertainty of Direct Emission Sources (Category 1)	
	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
No relevant emission sources		

Direct GHG Emissions - Mobile Source Emission Results

Proportion of Uncertainty Assessed Emissions to Total Category 1~2 Emissions	Uncertainty of Direct Emission Sources (Category 1)	
	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
0.96%	-1.38%	1.38%

Direct GHG Emissions - Process Emission Results

Proportion of Uncertainty Assessed Emissions to Total Category 1~2 Emissions	Uncertainty of Direct Emission Sources (Category 1)	
	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
No relevant emission sources		

Direct GHG Emissions - Fugitive Emission Results

Proportion of Uncertainty Assessed Emissions to Total Category 1~2 Emissions	Uncertainty of Direct Emission Sources (Category 1)	
	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
4.05%	0.00%	0.00%

Indirect GHG Emissions - Purchased Electricity Emission Results

Proportion of Uncertainty Assessed Emissions to Total Category 1~2 Emissions	Uncertainty of Indirect Emission Sources (Category 2)	
	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
94.99%	-7.07%	7.07%

Quantitative Uncertainty Results of GHG Emissions in This Report

Absolute Sum of Assessed Emissions (tCO2e)	Absolute Sum of Total Emissions (tCO2e)	Overall Uncertainty in This Report	
98.8686	125.3992	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Proportion of Emissions Included in Uncertainty Assessment Relative to Total Emissions (%)			
78.84%		-6.72%	6.72%

5.4 Qualitative Assessment of Uncertainty

For Categories 3 to 6, the uncertainty is presented qualitatively. The assessment result is A (indicating low uncertainty), as shown in Table 11. The evaluation is based on both the characteristics of the data and the source of emission factors. Data characteristics are assessed from two perspectives: (1) Derived from scenario assumptions and (2) availability of site-specific data. Emission factor sources are evaluated from two perspectives: (1) Global or regional factors and (2) national factors.

Table 11 Qualitative Uncertainty Assessment Criteria

Data Characteristics / Factor Sources	Derived from scenario assumptions (1)	Site-specific data available (2)
Global or regional factors (1)	1	2
National factors (2)	2	4
Note: A score of 4 points indicates low uncertainty and is represented as "A." A score of 2 points indicates moderate uncertainty and is represented as "B." A score of 1 point indicates high uncertainty and is represented as "C."		

Table 12 Qualitative Uncertainty Assessment of Significant Indirect Greenhouse Gases (Category 3–6)

Life Cycle Stage	Category	GHG Evaluation Item	Evaluation Factor					
			Based on hypothetical situations	Site-specific data	Regional coefficients	National coefficients	Score	Uncertainty Rating
Operation, Support and Service Phase	Category3	Employee Commuting		√		√	4	A
Raw Material Acquisition	Category4	Category4 (Emissions from purchased goods)		√		√	4	A
Raw Material Acquisition	Category4	Upstream emissions of purchased energy		√		√	4	A
Operation, Support and Service Phase	Category4	Domestic Waste		√		√	4	A

Note:

A score of 4 points indicates low uncertainty and is represented as "A."

A score of 2 points indicates moderate uncertainty and is represented as "B."

A score of 1 point indicates high uncertainty and is represented as "C."

Chapter 6 Greenhouse Gas Information Management and Inventory Procedures

6.1 GHG Inventory Management Procedures

The Company conducts its GHG inventory in accordance with ISO 14064-1:2018 requirements for document retention and recordkeeping, as well as the Company’s internal GHG management needs, following the Greenhouse Gas Inventory Management Procedures. For Categories 2–6, GHG risk assessments are performed using the GHG Risk Assessment Form. Identified significant GHG emissions are subsequently inventoried and quantified.

6.2 GHG Inventory Information Management

The Company conducts its GHG inventory in accordance with the Greenhouse Gas Inventory Management Procedures, providing relevant departments with a framework to report their GHG inventory results. The Company has established GHG control procedures, GHG data quality management measures, and verification protocols for coefficients and data applicable to the reporting year, maintaining the operational integrity of its GHG management system. This approach ensures compliance with ISO 14064-1:2018 information management requirements and serves as a reference for management decision-making, thereby mitigating corporate GHG emission risks.

Chapter 7 Verification

7.1 Internal Verification

The GHG inventory results were subjected to internal verification on 2025/9/23. Any identified deficiencies were corrected following the internal (first-party) verification process.

7.2 External Verification

This GHG report has been prepared in accordance with ISO 14064-1:2018. The verification level for direct GHG emissions and removals, as well as for energy-related indirect GHG emissions, is reasonable assurance, while the verification level for other indirect GHG emissions is limited assurance, with a materiality threshold of 5%. In the future, external verification will be conducted by a third party.

Chapter 8 Report Management

8.1 Reporting Period

The reporting period of this report is from 2024/01/01 to 2024/12/31.

8.2 Reporting Frequency

The Company prepares this report on an annual basis.

8.3 Standard Referenced in Report Preparation

This report is prepared in accordance with the requirements of ISO 14064-1:2018 standards.

8.4 Report Issuance and Retention

This report serves as an internal reference document for the Company, intended solely for internal greenhouse gas management and third-party verification purposes. The report becomes effective upon issuance and remains valid until it is amended or revoked. Upon approval by the management representative, the report is published, and the original text version is retained by the Company. The intended use of the Company's GHG inventory is: Voluntary annual report for communication with customers and stakeholders.

8.5 Contact Information for Report Inquiries

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Chapter 9 References

- *The Greenhouse Gas Protocol - a corporate accounting and reporting standard (revision version)*. Retrieved from: https://ghgprotocol.org/corporate-standard
- ISO 14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, Publication date : 2018-12. Retrieved from: https://www.iso.org/standard/66453.html
- *IPCC AR6 Climate Change 2021: The Physical Science Basis Full Report*. Retrieved from: https://www.ipcc.ch/report/ar6/wg1/
- *IPCC Working Group III Report: AR6_WGIII_Annex-II:* https://www.ipcc.ch/report/ar6/wg3/
- IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*, 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Retrieved from: https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html
- Taiwan Ministry of Environment GHG Emission Factor Management Table, Version 6.0.4. Retrieved from: https://ghgregistry.moenv.gov.tw/epa_ghg/Downloads
- Taiwan Ministry of Environment Greenhouse Gas Emission Factors Management Table (Announcement Version, February 5, 2024)

  from: https://ghgregistry.moenv.gov.tw/upload/Tools/DI/113%E5%B9%B42%E6%9C%885%E6%97%A5%E5%85%AC%E5%91%8A%E6%BA%AB%E5%AE%A4%E6%B0%A3%E9%AB%94%E6%8E%92%E6%94%BE%E4%BF%82%E6%95%B8.pdf
- Carbon Footprint Information Platform. Retrieved from: https://cfp-calculate.tw/cfpc/WebPage/LoginPage.aspx
- Electric Meter Inspection and Testing Technical Specification, Edition Number CNMV 46, 6th Edition. Retrieved from: https://www.rootlaw.com.tw/Attach/L-Doc/A040100081004400-1070321-1000-001.pdf
- Fuel Gauge Inspection and Testing Technical Specification (CNMV 117, 3rd Edition). Retrieved from: https://www.bsmi.gov.tw/wSite/laws/review.jsp?lawId=2c9081fe1cb5eda4011cb67791ad05f2
- ICAO Carbon Emissions Calculator. Retrieved from: https://www.icao.int/ENVIRONMENTAL-PROTECTION/CarbonOffset/Pages/default.aspx
- Ministry of Natural Resources and Environment of Vietnam - Electricity: http://www.dcc.gov.vn/van-ban-phap-luat/1110/He-so-phat-thai-luoi-dien-Viet-Nam-2022.html
- Vietnam - Fossil Fuel: http://enerteam.org/quy-doi-nang-luong-sang-toe.html