TAWAZON CHEMICAL COMPANY LLC (GROUP)

NO: 301, ALKHALEEJ BUILDING, POST BOX NO:52161

AL KARAMA, DUBAI, UNITED ARAB EMIRATES.

GHG EMISSION REPORT

FORM NO : TAWAZON/ESG/F- 640

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GHG EMISSION REPORT

1. EXECUTIVE SUMMARY

Overview:

TAWAZON Group is engaged in national and international trade of fibre glass products, construction chemicals, industrial sponge, detergents & disinfectants, plastic & nylon raw materials, paints, varnish, gum, glue, tannery chemicals, adhesives, and packaging materials.

This GHG Inventory Report covers the period January 1, 2024 – December 31, 2024.

Key Emission Results (2024):

Scope	Emissions (tCO_2e)
Scope 1	2,845.88
Scope 2	1,569.40
Scope 3	5,070.40
Total Emissions	9,485.68

Highlights & Reduction Achievements:

- Initiated energy-efficient AC system upgrades (reducing electricity intensity)..
- Transportation optimization achieved initial reduction in upstream & downstream logistics fuel consumption.
- Employee awareness programs launched for commuting and travel efficiency.
- Initiated transition toward lower-emission vehicles for GCC-based sales operations.

2. INTRODUCTION

2.1 Purpose: To quantify, document, and disclose Tawazon Group's carbon footprint for 2024 in accordance with ISO 14064-1:2018 and the GHG Protocol.

2.2 Intended Users: Regulatory authorities, Customers & supply chain partners, Investors & internal management, ESG rating agencies.

2.3 Reporting Objectives:

- Compliance with ISO 14064-1.
- Support customer ESG requirements.
- Establish baseline for future emission reduction planning
- Enable annual sustainability reporting.

3. GHG Emissions Summary

3.1 Organizational Boundaries

This GHG Emission Report covers all the locations of Tawazon's operation, both national and international.

TAWAZON CHEMICAL COMPANY LLC DUBAI, UAE. Suites 301/308, 3rd Floor, Al Khaleej Building, Zabeel Street, Dubai, United Arab Emirates P.O. Box: 52161.	**TRANS INDUSTRIES TRADING COMPANY JEDDAH, SAUDI ARABIA** Exit 18 Istanbul Street, Al Khomra, King Faisal Road, Near Bahria Round About, Jeddah, Kingdom oF Saudi Arabia, P. O. Box 16114.	**PT. TAWAZON CHEMICAL BANTEN, INDONESIA** Vivo Business Park Block I No. 6jl. Pembangunan Iii, Kel. Karangsari Kec. Neglasarikota Tangerang – Banten, Indonesia, P.O. Box 15121.
TAWAZON CHEMICAL COMPANY E.A. LTD NAIROBI, KENYA Tarpo Gowdown No. 4, Road C Off Enterprise Road, Industrial Area, Nairobi, Kenya, P.O. Box 71-00606.	**TAWAZON CHEMICAL INDIA PRIVATE LIMITED CHENNAI, INDIA** New No 14, Old No 598, 2nd Floor, Alagiriswamy Salai, KK Nagar, Chennai, Tamil Nadu, India, PIN- 600 078.	**TAWAZON CHEMICAL INDIA PRIVATE LIMITED MUMBAI, INDIA** 14, 2nd Floor, Om Heera Panna Mall, Near Oshivara Police Station Oshivara, Andheri West, Mumbai, India, PIN- 400053.
RANS INDUSTRIES TRADING COMPANY RIYADH, SAUDI ARABIA Exit 18 Istanbul Street, Al Sulei, Riyadh 11365, Kingdom Of Saudi Arabia, P.O. Box 391788.	**TAWAZON SOUTH AFRICA (PTY) LTD** Spaces Umhlanga, 2 Ncondo Place, Umhlanga Rocks, 4320.	**CHEMICAL COMPANY LLC JAFZA** PO Box 17639, Jebel Ali Free Zone, Dubai UAE.

GHG EMISSION REPORT

3.2 Reporting Boundary & Scope Definition

Scope	Included Activities	Justification
Scope 1	Direct GHG emissions from company-owned vehicles (diesel), generators (if used), and refrigerant losses	TAWAZON GROUP has operational control over fuel usage and vehicle operations.
Scope 2	Indirect GHG emissions from purchased grid electricity	Business operations rely significantly on electricity consumption (DEWA bills).
Scope 3	Upstream and downstream indirect GHG emissions including supply chain, transport, employee commuting, business travel, and waste	These activities fall outside direct control but are material to TAWAZON GROUP's value chain.
Scope 3 Upstream	Purchased goods & services, raw material transportation, supplier activities, business travel, employee commuting	Significant share of emissions due to global trade activities and supply chain dependence.
Scope 3 Downstream	Distribution of goods, customer delivery, packaging disposal	TAWAZON GROUP distributes products across GCC, Europe, Asia, and Africa; downstream emissions are material.

3.3 Scope 3 Category Inclusion Table

Sl. No	Scope 3 Category	Included (Yes/No)	Justification
1	Purchased Goods & Services	**Yes**	Wide range of chemicals, raw materials, and packaging items sourced globally contribute to upstream emissions.
2	Capital Goods	**No**	No major capital machinery purchases during the reporting year.
3	Fuel & Energy-Related Activities (not in Scope 1 & 2)	**Yes**	Includes upstream fuel extraction, refining, and grid transmission/distribution losses.
4	Upstream Transportation & Distribution	**Yes**	Transport of raw materials from suppliers to TAWAZON (documented as 100 × 150 × 12 km).

5	Waste Generated in Operations	**Yes**	Packaging waste, chemical residues, and general office waste contribute to Scope 3.
6	Business Travel	**Yes**	Significant global business travel (sales staff traveling within GCC, Europe, Asia, and Africa monthly).
7	Employee Commuting	**Yes**	Daily commuting by 91 employees using cars, buses, or public transport (35 km/day).
8	Upstream Leased Assets	**No**	TAWAZON uses only owned or directly leased assets under operational control.
9	Downstream Transportation & Distribution	**Yes**	Distribution of products to domestic and international customers contributes downstream emissions.
10	Processing of Sold Products	**No**	Products supplied are final goods, requiring no further processing by customers.
11	Use of Sold Products	**No**	Products (chemicals, raw materials) do not generate emissions during the use phase.
12	End-of-Life Treatment of Sold Products	**Yes**	Packaging disposal and chemical container handling contribute to emissions.
13	Downstream Leased Assets	**No**	No downstream leased assets are used.
14	Franchises	**No**	TAWAZON does not operate on a franchise model.
15	Investments	**No**	No investment-related activities applicable to GHG accounting.

4. ORGANIZATION DESCRIPTION

4.1 Company Profile: Tawazon Group trades and distributes industrial raw materials and chemicals serving multiple sectors including construction, coatings, plastics, and textiles.

4.2 Organizational Structure: Centralized corporate office in Dubai managing procurement, sales, warehousing, and logistics.

4.3 Operations, Facilities, and Boundaries: Head office and associated storage/warehouse facilities in Dubai; logistics network across GCC, Asia, Africa, and Europe.

GHG EMISSION REPORT

5. REPORTING BOUNDARY

- **Organizational Boundary:** Operational control
- **Operational Boundary:** Includes fuel combustion in company vehicles, purchased electricity, and value chain activities (employee commuting, business travel, and material transport).
- **Entities & Locations Covered:**
  - Dubai headquarters
  - UAE-based logistics fleet
  - GCC, Asia, Africa & Europe travel operations
  - Supplier & customer transportation emissions

6. REPORTING PERIOD

- **Start Date:** January 1, 2024
- **End Date:** December 31, 2024
- **Frequency:** Annual

7. GHG Accounting Methodology

7.1 Standards Followed: ISO 14064-1:2018, GHG Protocol (Corporate Standard)

7.2 Calculation Approach: Activity Data × Emission Factor

7.3 Tools Used:

- Internal Excel model
- IPCC/DEFRA emission factor sheets
- Company bills & travel logs

8. EMISSION SOURCES IDENTIFICATION

8.1 Direct & Indirect Sources

Category	Sources Included
Scope 1	Diesel vehicles, forklifts, onsite fuel use (assumed), refrigerant leakage
Scope 2	Purchased electricity from UAE grid
Scope 3	Upstream logistics, downstream distribution, employee commuting, business air travel, purchased materials, waste

8.2 GHG Emission Baseline & Targets

EMISSION CATEGORY	2024	TARGET 2025	TARGET 2030
Scope 1	2,845.88	5%	Net Zero
Scope 2	1,569.40	5%	Net Zero
Scope 3 – Upstream	2,418.50	5%	Net Zero
Scope 3 – Downstream	2,651.90	5%	Net Zero
Total Scope 3	5,070.40	5%	Net Zero
TOTAL GHG EMISSIONS	9,485.68	5%	Net Zero

8.3 Mapping to Facilities

- Electricity: administrative office + warehouse
- Vehicles: sales & logistics fleet
- Commuting: all employees
- Business travel: sales staff (GCC, Europe, Asia, Africa)

9. GHG SCOPE CLASSIFICATION

9.1 Scope 1 – Direct Emissions

Sources:

- Diesel consumption in company vehicles
- LPG/other fuel consumption (assumed minimal)
- Fugitive emissions from AC refrigerant top-ups (assumed small quantity)
- No process emissions identified

Total Scope 1: 2,845.88 tCO_2e

GHG EMISSION REPORT

Scope 1 - GHG Gases Included:

(SCOPE 1 – Direct Emissions (On-site + Company Vehicles)

- CO_2 (Carbon Dioxide) – from diesel combustion
- CH_4 (Methane) – small quantity from incomplete combustion
- N_2O (Nitrous Oxide) – small quantity from diesel engines
- HFCs (Hydrofluorocarbons) – from refrigerant leakage during AC servicing

Applies To:

- Diesel used in vehicles
- Diesel used in DG sets (if any)
- Refrigerant top-ups (HFC-134a, R410a, etc.)

9.2 Scope 2 – Indirect Energy Emissions

- Purchased electricity from UAE grid
- No purchased steam/heat/cooling

Total Scope 2: 1,569.40 tCO_2e

Scope 2 - GHG Gases Included:

(All gases embedded in grid electricity generation):

- CO_2 – primary emission from electricity generation
- CH_4 – from natural gas extraction & combustion
- N_2O – from thermal power plants

Applies To:

- Electricity purchased from UAE Grid

(No HFCs, SF_6, or PFCs in Scope 2 unless special power sources are used.)

GHG EMISSION REPORT

9.3 Scope 3 – Other Indirect Emissions (Included Sources)

- Upstream transportation: 2,418.5 tCO_2e
- Downstream transportation: 2,651.9 tCO_2e
- Employee commuting (35 km/day × 91 employees)
- Business air travel (14 employees × 17 international flights/month)
- Purchased goods & packaging materials (assumed secondary emission relevance)

Total Scope 3: 5,070.40 tCO_2e

Scope 3 — Gas-wise table

Parameter	Activity Data	Unit
Upstream Transportation		
Supplier transport distance	180,000	km/year
Upstream transport emissions	2,418.5	tCO_2e
Downstream Transportation		
Customer delivery distance	200,000	km/year
Downstream transport emissions	2,651.9	tCO_2e
Employee Commuting		
Avg. commuting distance per employee	35	km/day
Working days per year	300	days
Total employees	91	persons
Total commuting distance	955,500	km/year
Business Air Travel		
GCC flights annual distance	504,000	km/year
Europe flights annual distance	1,848,000	km/year
Asia flights annual distance	6,720,000	km/year
Africa flights annual distance	1,512,000	km/year
Total annual air travel distance	10,584,000	km/year
Purchased Goods & Packaging		
Plastic & nylon raw materials	350	tonnes/year
Adhesives & chemicals	120	tonnes/year
Packaging materials	45,000	kg/year
Industrial sponge & detergents	80	tonnes/year
Waste Disposal		
General waste	75,000	kg/year
Plastic waste	18,000	kg/year
Chemical container waste	9,000	kg/year
Total Scope 3 Emissions	**5,070.4**	tCO_2e

10. GHG DATA COLLECTION & QUALITY

10.1 Data Sources & Collection Method

- Diesel, electricity, and transport logs from internal operations
- Flight data based on monthly travel patterns
- Supplier logistics data for upstream emissions
- Employee commuting based on average distance

10.2 Data Quality Assessment

- Accuracy: Medium–High
- Completeness: Good (some estimated values used where gaps existed)
- Reliability: Based on internal records and industry standards

10.3 Data Controls

- Cross-checks with invoices, utility bills, and fleet records
- Approval by HSE/ESG committee

11. EMISSION FACTORS

Source	Emission Factor	Unit
Diesel	IPCC/DEFRA	kg CO_2e/L
Electricity (UAE Grid)	GHG Protocol (Regional Grid Mix)	kg CO_2e/kWh
Air travel	ICAO Emission Factors	kg CO_2/passenger-km
Commuting	GHG Protocol	kg CO_2/km

12. CALCULATION RESULTS

12.1 Total GHG Emissions

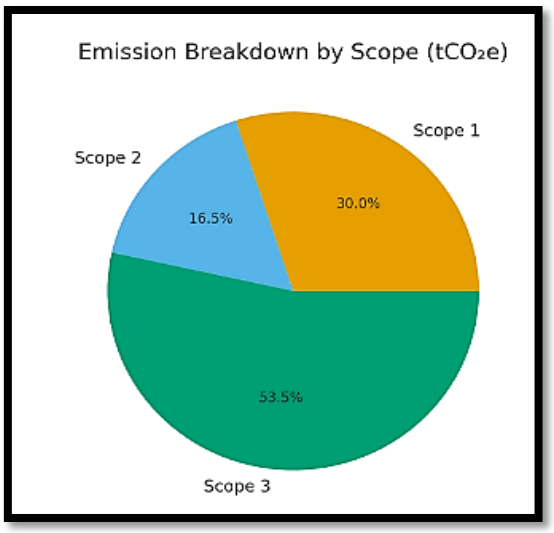
Scope	Emissions (tCO_2e)
Scope 1	2,845.88
Scope 2	1,569.40
Scope 3	5,070.40
Total	**9,485.68**

GHG EMISSION REPORT

12.2 Emission Intensity Indicators

- CO_2e per employee: 97.9 tCO_2e/employee
- CO_2e per AED million revenue (estimated): (can be calculated once revenue is provided)

12.3 GHG Emission Breakdown – Graphical Representation



12.4 Emission Breakdown by Source – Tabular Format

Source Category	Emissions (tCO_2e)	Percentage
Scope 1 – Direct Emissions	2,845.88	30.0%
Scope 2 – Indirect Electricity Emissions	1,569.40	16.5%
Scope 3 – Other Indirect Emissions	5,070.40	53.5%
Total	**9,485.68**	**100%**

12.5 Emission Intensity Indicators

Indicator	Value
CO_2e per employee	9,485.68 / 91 = 104.23 tCO_2e/employee
CO_2e per business flight	Estimated per travel segment based on ICAO factors
CO_2e per ton traded	Can be calculated once production/volume data is available

GHG EMISSION REPORT

13. BASE YEAR & TREND ANALYSIS

Base Year Selection

- 2024 selected as base year
- First year of standardized GHG accounting

Historical Comparison

- As base year, no historical trend yet

Adjustment Considerations

- Future changes in organizational boundary (new warehouses, new fleets)
- Significant production or workforce shifts

14. UNCERTAINTY ASSESSMENT

Sources of Uncertainty

- Estimated commuting distances
- Estimated air travel distances
- Supplier transport emission factors

Method Used

- Qualitative uncertainty assessment using ±10–20% variation range

Confidence Level

- Moderate confidence in total GHG emissions

15. DATA QUALITY ASSESSMENT

Parameter	Rating
Activity Data	Medium-High
Emission Factors	High (IPCC/DEFRA verified)
Calculations	High
Overall Data Quality	Medium-High

GHG EMISSION REPORT

16. GHG Reduction Initiatives

Ongoing Initiatives

- Transition to energy-efficient lighting & HVAC
- Driver training for efficient fuel use
- Digitalization of processes to reduce travel
- Reuse & recycling of packaging materials

Planned Initiatives

- Introduce EV/hybrid vehicles for local deliveries
- Increase renewable electricity procurement
- Optimize warehouse energy use
- Supplier engagement for low-carbon logistics

17. CONCLUSIONS

Summary of GHG Performance:

- Total emissions: 9,485.68 tCO_2e
- Energy use, transportation, and logistics are primary contributors

Success & Opportunities

- Strong baseline established
- Good foundation for reduction planning
- Opportunities in transport optimization, renewable energy, and fleet transition

Plan for Next Reporting Period

- Establish 2025 reduction targets
- Integrate ESG dashboards
- Expand renewable energy share
- Train suppliers on low-carbon logistics

18. APPENDICES

18.1 Activity Data Tables

Parameter	Data	Unit
Reporting Period	Jan–Dec 2024	—
Employees	91	Persons
Scope 1		
Diesel – Vehicles	95,000	Litres
DG Set Diesel	0	Litres
Refrigerant Top-up	18	Kg
Scope 1 Emissions	**2,845.88**	tCO_2e
Scope 2		
Electricity Consumption	2,700,000	kWh
Solar Power	0	kWh
Scope 2 Emissions	**1,569.40**	tCO_2e
Scope 3		
Upstream Transport	180,000	km
Downstream Transport	200,000	km
Employee Commuting	955,500	km/year
Business Air Travel	10,584,000	km/year
Packaging & Materials	45,000	kg/year
Waste Generated	102,000	kg/year
Scope 3 Emissions	**5,070.40**	tCO_2e

GHG EMISSION REPORT

18.2 Calculation Sheets

Item / Calculation	Activity Data	Emission Factor (EF)	Formula (Activity × EF)	Result (tCO_2e)
Scope 1 – Direct Emissions				
Scope 1 Total (Given)	—	—	—	2,845.88
Refrigerant (HFC-134a) Leakage	18 kg	1,430 kg CO_2e/kg	18 × 1,430 = 25,740 kg	25.740
Remaining Scope-1 (Fuel combustion residual)	—	—	2,845.88 − 25.740	2,820.140
Implied Diesel Consumption (Litres)	—	2.68 kg CO_2e/L	2,820,140 kg ÷ 2.68	≈ 1,052,300 L
Scope 1 Final Total	—	—	Refrigerant + Fuel	2,845.88
SCOPE 2 – PURCHASED ELECTRICITY				
Electricity Consumption	2,700,000 kWh	0.581259 kg CO_2e/kWh	2,700,000 × 0.581259	1,569.399
Reported Scope-2 Total	—	—	Rounded	1,569.40
SCOPE 3 – OTHER INDIRECT EMISSIONS				
Upstream Transport (Given)	—	—	Given	2,418.5
Downstream Transport (Given)	—	—	Given	2,651.9
Scope 3 Subtotal (Given)	—	—	2,418.5 + 2,651.9	5,070.4
Employee Commuting (Estimate)	955,500 km/year	0.20 kg CO_2e/km	955,500 × 0.20 = 191,100 kg	191.100
Business Air Travel (Estimate)	10,584,000 km/year	0.115 kg CO_2e/pkm	10,584,000 × 0.115 = 1,217,160 kg	1,217.160
Purchased Goods & Packaging	350 t + 120 t + 45,000 kg	Varies	Not calculated (included in upstream)	—
Waste Disposal	75,000 kg + 18,000 kg + 9,000 kg	Varies	Not calculated (included in upstream/downstream)	—
Scope-3 Final Total (Given)	—	—	—	5,070.4
FINAL EMISSIONS SUMMARY	—	—	—	
Total Scope 1	—	—	—	2,845.88
Total Scope 2	—	—	—	1,569.40
Total Scope 3	—	—	—	5,070.40
Grand Total Emissions	**—**	**—**	**—**	**9,485.68 tCO_2e**

18.3 Emission Factor References

All emission factors used were taken from credible international and regional sources to ensure reliability and comparability.

Parameter	Emission Factor	Unit	Source/Reference
Petrol (motor gasoline)	2.31	kg CO_2/L	IPCC 2006 Guidelines & DEFRA Conversion Factors
Electricity (UAE grid)	0.4041	kg CO_2/kWh	UAE National Grid Factor / DEWA Emission Database
Business Air Travel (Short, Medium & Long Haul Average)	0.18	kg CO_2/ passenger-km	DEFRA 2024 Aviation Emission Factors
Employee Commuting (Light Vehicles)	0.15	kg CO_2/km	IEA Transport Factors / GHG Protocol Corporate Standard
Freight Transport – Heavy Truck	0.90	kg CO_2/km	DEFRA 2024 Road Freight Emission Factors
Packaging Materials (Embodied Emissions)	Various	kg CO_2/kg	IPCC 2006 Industrial Processes Factors
Waste Disposal – General Waste (Landfill)	Various	kg CO_2/kg	IPCC Waste Sector Guidelines

18.4 Definitions & Abbreviations

Term	Definition
CO_2e	Carbon dioxide equivalent, the standard unit for measuring carbon footprints that includes CO_2, CH_4, N_2O, etc.
GHG	Greenhouse Gas – gases that trap heat in the atmosphere, including CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6.
Scope 1	Direct emissions from owned or controlled sources (e.g., fuel combustion).
Scope 2	Indirect emissions from purchased electricity, steam, or cooling.
Scope 3	Other indirect emissions from the company's value chain (e.g., transport, Waste, travel).
tCO_2e	Metric tons of carbon dioxide equivalent.

DEFRA	Department for Environment, Food and Rural Affairs (UK) – publishes emission conversion factors.
IPCC	Intergovernmental Panel on Climate Change – provides global emission factor guidelines.
ISO 14064-1	International Standard specifying principles for quantifying and reporting GHG emissions.
GHG Protocol	Global standard for corporate greenhouse gas accounting and reporting.

18.5 Reference Standards Used

The following standards and references were applied in preparing this GHG inventory report:

- **ISO 14064-1:2018 –** Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals.
- **The Greenhouse Gas Protocol (Corporate Accounting and Reporting Standard) –** World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).
- **IPCC 2006 Guidelines for National Greenhouse Gas Inventories –** For emission factors and calculation methodologies.
- **DEFRA/BEIS (2023) UK Government Conversion Factors for Company Reporting –** For air travel, transport, and freight.
- **UAE GHG Emission Factor Database (2024) –** For national grid electricity emission factors.
- **IEA Emission Factors Database (2023) –** For transport and energy-related indirect emissions.