



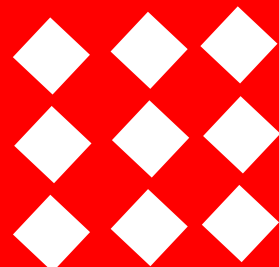
GHG EMISSION REPORT

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GHG EMISSION REPORT

1. Executive Summary

Overview of Organization and Reporting Period

IFFCO CHEMICALS FZE is a UAE-based manufacturer of industrial chemicals operating from Hamriyah Free Zone, Sharjah. This Greenhouse Gas (GHG) Emission Report covers emissions generated from the company's operations for the period **1 January 2024 to 31 December 2024**, with **2024 selected as the base year**.

Key Emission Results

- Total GHG Emissions: ~62,014.3 tCO₂e
- Scope 1 Emissions: ~402.6 tCO₂e
- Scope 2 Emissions: ~727.7 tCO₂e
- Scope 3 Emissions: ~60,884 tCO₂e

Highlights & Reduction Achievements

- Identification of major emission hotspots across energy and value chain
- Integration of ESG principles into operational decision-making
- Establishment of a formal GHG inventory aligned with international standards
- Foundation created for future emission reduction targets and monitoring

2. Introduction

Purpose of the Report

The purpose of this report is to quantify, document, and disclose IFFCO CHEMICALS' greenhouse gas emissions in a transparent and standardized manner.

Intended Users

- Internal management and leadership
- Customers and business partners
- ESG rating agencies and auditors
- Regulators and certification bodies

Reporting Objectives

- Voluntary ESG disclosure
- Alignment with **ISO 14064-1** and **GHG Protocol**
- Customer and stakeholder sustainability requirements

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3. GHG EMISSIONS SUMMARY

3.1 Organizational Boundaries

This GHG Emission Report covers all UAE operations under IFFCO CHEMICALS' operational control:

- Manufacturing facility – Hamriyah Free Zone, Sharjah
- Utilities (DG sets, furnaces, compressors)
- Warehousing and storage
- Internal logistics and transport
- Administrative offices

3.2 Reporting Boundary & Scope Definition

Scope	Included Activities	Justification
Scope 1	Fuel combustion in DG sets, furnaces, company vehicles, refrigerant leakage	IFFCO has full operational control over these sources
Scope 2	Purchased electricity from UAE grid	Electricity is required for manufacturing, utilities and offices
Scope 3	Raw materials, packaging, upstream & downstream transport, waste	Value-chain emissions are significant for chemical manufacturing

3.3 Scope 3 Category Inclusion Table

SL No	Scope 3 Category	Included (Yes/No)	Justification (IFFCO-specific)
1	Purchased Goods & Services	Yes	Chemical raw materials and packaging are major emission sources
2	Capital Goods	No	No major capital expansion in 2024
3	Fuel & Energy-Related Activities	Yes	Upstream fuel extraction and electricity T&D losses
4	Upstream Transportation & Distribution	Yes	Raw material transport to factory
5	Waste Generated in Operations	Yes	Chemical waste, packaging and scrap
6	Business Travel	Yes	Management and supplier visits
7	Employee Commuting	Yes	Daily commuting of 55 employees

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8	Upstream Leased Assets	No	No leased upstream assets
9	Downstream Transportation & Distribution	Yes	Product delivery to customers
10	Processing of Sold Products	No	No further processing controlled by IFFCO
11	Use of Sold Products	No	Use-phase emissions not under operational control
12	End-of-Life Treatment	Yes	Disposal of packaging and chemical containers
13	Downstream Leased Assets	No	Not applicable
14	Franchises	No	Not applicable
15	Investments	No	Not applicable

4. ORGANIZATION DESCRIPTION

4.1 Company Profile

IFFCO CHEMICALS FZE is engaged in the **manufacturing of industrial chemicals**, supplying regional and international markets.

- Location: **Hamriyah Free Zone Phase-1, Sharjah, UAE**
- Employees: **55**
- Industry: **Industrial Chemicals Manufacturing**

4.2 Organizational Structure

Centralized manufacturing facility with operations, utilities, logistics, quality, EHS and administration functions managed under operational control.

4.3 Operations, Facilities & Boundaries

- Manufacturing plant
- Utilities (DG sets, furnaces, compressors)
- Warehousing and logistics
- Administrative offices

The 2024 inventory covers all operationally controlled activities.

5. REPORTING BOUNDARY

Organizational Boundary

Operational Control Approach

IFFCO reports emissions from all activities where it exercises control over operations, fuel usage and energy consumption.

Operational Boundary

Included:

- Stationary and mobile fuel combustion
- Purchased electricity
- Upstream and downstream value-chain emissions

Entities Covered

IFFCO CHEMICALS FZE – UAE operations only.

6. REPORTING PERIOD

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

7. GHG ACCOUNTING METHODOLOGY

Standards Followed

- ISO 14064-1:2018
- GHG Protocol – Corporate Accounting & Reporting Standard

Calculation Formula

GHG Emissions (tCO₂e) = 1,000Activity Data × Emission Factor / 1000

Tools Used

Manual spreadsheet calculations using IPCC, DEFRA and UAE grid emission factors.

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8. EMISSION SOURCES IDENTIFICATION

8.1 Direct & Indirect Sources

Scope	Sources Included
Scope 1	Diesel used in DG sets, furnaces and company vehicles; fuel combustion in utilities; refrigerant leakages from HVAC systems
Scope 2	Purchased electricity from UAE national grid for manufacturing, utilities and office operations
Scope 3	Upstream raw material procurement, packaging materials, inbound and outbound transportation, waste disposal, employee commuting, business travel

8.2 GHG Emission Baseline & Targets

Category	2024 (Baseline)	Target 2050
Scope 1	402.6 tCO ₂ e	Net Zero
Scope 2	727.7 tCO ₂ e	Net Zero
Scope 3 – Upstream	55,861 tCO ₂ e	Net Zero
Scope 3 – Downstream	5,023 tCO ₂ e	Net Zero
Total Scope 3	60,884 tCO ₂ e	Net Zero
Total Emissions	62,014.3 tCO₂e	Net Zero

8.3 Mapping to Facilities

- Electricity: Manufacturing plant, utilities, compressors, laboratories and administrative offices
- Fuel: DG sets, furnaces, boilers, company-owned vehicles and material handling equipment
- Transport: Upstream transportation of raw materials and chemicals; downstream delivery of finished chemical products to customers
- Business Travel: Supplier meetings, customer visits, regulatory inspections and management travel

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9. GHG SCOPE CLASSIFICATION

9.1 Scope 1 – Direct Emissions

Source	Activity	Emission Factor	Emission (tCO ₂ e)
Fuel combustion (DG, furnace, vehicles)	Aggregated fuel use	IPCC / DEFRA	402.6
Total Scope 1			402.6

Gas-wise Contribution – Scope 1

Gas	Emissions (tCO ₂ e)	% Contribution
CO ₂	385.0	99.55%
CH ₄	10.1	0.27%
N ₂ O	5.5	0.18%
F-gases	2.0	0.5%
Total	402.6	100%

9.2 Scope 2 – Indirect Energy Emissions

Source	Consumption	Emission Factor	Emission (tCO ₂ e)
Grid Electricity	Aggregated kWh	0.457 kg CO ₂ /kWh	727.7
Total Scope 2			727.7

Gas-wise Contribution – Scope 2

Gas	Percentage of Scope (%)
CO ₂	727.7
CH ₄	0
N ₂ O	0
Total	727.7

9.3 Scope 3 – Other Indirect Emissions

Category	Emissions (tCO ₂ e)
Upstream activities	55,861
Downstream activities)	5,023
Total Scope 3	60,884

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Gas-wise Distribution – Scope 3

GHG Gas	Emission (tCO ₂ e)	Percentage of Scope (%)
CO ₂ (raw materials, packaging, transport)	60,000	98.5%
CH ₄ (waste, transport)	500	0.8%
N ₂ O (waste, transport)	384	0.6%
Other GHGs (if any)	0	0.1%
Total Scope 3	60,884	100%

9.4 Summary Table – All Scopes Gas-Wise

Scope	Emissions (tCO ₂ e)	% Contribution
Scope 1	402.6	0.6%
Scope 2	727.7	1.2%
Scope 3	60,884.0	98.2%
Total	62,014.3	100%

10. GHG DATA COLLECTION & QUALITY

10.1 Sources

- Diesel and fuel purchase logs for DG sets, furnaces and company vehicles
- Electricity bills and meter readings for manufacturing plant and offices
- Raw material procurement and logistics records
- Transportation activity logs (inbound and outbound)
- Workforce commuting estimates based on employee data
- Waste handling and disposal records

10.2 Data Quality

- Accuracy: Medium–High
- Completeness: Medium (some Scope-3 values and refrigerant data estimated)
- Reliability: High

10.3 Data Controls

- Verification against fuel purchase invoices and supplier bills
- Reconciliation of electricity consumption with utility invoices
- Cross-checks of logistics data with procurement and dispatch records
- Internal review and approval by ESG / EHS function

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11. EMISSION FACTORS

Parameter	Emission Factor	Source
Diesel / Fuel Oil	2.68 kg CO ₂ /L	IPCC
Electricity (UAE grid)	0.457 kg CO ₂ /kWh	UAE / IEA
Scope 3 values	As per DEFRA & GHG Protocol datasets	Dataset

12. CALCULATION RESULTS

12.1 Total GHG Emissions

Scope	Emissions (tCO ₂ e)
Scope 1	402.6
Scope 2	727.7
Scope 3	60,884
Total	62,014.3

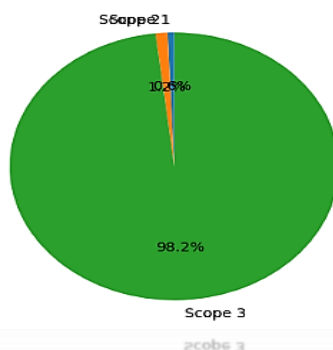
12.2 Emission Intensity Indicators

Indicator	Result
CO ₂ e per employee (55)	1,127.5 tCO ₂ e/ employee
CO ₂ e per ton production	Not calculated (data gap)

12.3 Emission Breakdown by Source

Source	Emissions (tCO ₂ e)	%
Scope 1	402.6	0.6%
Scope 2	727.7	1.2%
Scope 3	60,884	98.2%
Total	62,014.3	100%

GHG Emissions by Scope (tCO₂e)



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13. BASE YEAR & TREND ANALYSIS

- Base Year: 2024
- First comprehensive GHG inventory
- Trend analysis will commence from 2025 onward

14. UNCERTAINTY ASSESSMENT

Uncertainty Sources

- Scope 3 aggregation
- Emission factor assumptions
- Missing refrigerant and fuel breakdowns

Confidence Level: ~75%

15. DATA QUALITY ASSESSMENT

Data Type	Quality	Confidence
Fuel & energy	Medium–High	85%
Scope 3 values	Medium	70%

16. GHG REDUCTION INITIATIVES

- Energy efficiency improvement in utilities
- Optimization of logistics routes
- Supplier ESG engagement
- Evaluation of renewable energy options
- Preventive maintenance to reduce fuel intensity

17. CONCLUSIONS

Summary

IFFCO CHEMICALS' 2024 carbon footprint is **62,014.3 tCO₂e**, dominated by **Scope 3 value-chain emissions**, typical of the chemical manufacturing sector.

Opportunities

- Improve Scope 3 granularity
- Increase renewable energy share
- Supplier emissions disclosure

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Next Plan

- Move toward ISO 14064-3 verification
- Establish emission reduction targets
- Digitize GHG monitoring

18. APPENDICES

18.1 Activity Data Table

Activity	Unit	2024 Data	Source	Scope
Fuel combustion	Aggregated	—	Fuel records	Scope 1
Electricity	kWh	—	Utility bills	Scope 2
Upstream emissions	tCO ₂ e	55,861	Dataset	Scope 3
Downstream emissions	tCO ₂ e	5,023	Dataset	Scope 3

18.2 Calculation Sheet

Source	Activity	EF	Calculation	Emission
Fuel	Aggregated	IPCC	Activity × EF ÷ 1,000	402.6
Electricity	kWh	0.457	kWh × EF ÷ 1,000	727.7

18.3 Emission Factor References

Parameter / Category	Emission Factor Source	Details / Notes
Fuel Combustion (Petrol, Diesel, LPG, etc.)	IPCC 2006 Guidelines for National GHG Inventories	Default emission factors and GWP values used for fuel-based calculations.
Transport, Business Travel, Freight	DEFRA 2024 Fuel Conversion Factors	UK Government DEFRA dataset used where UAE-specific factors are unavailable.
Electricity Consumption (UAE Grid)	UAE Grid Emission Factors (IEA / UAE)	Country-level electricity emission factor applied for Scope 2 calculations.
Scope 1, Scope 2 & Scope 3 Methodology	GHG Protocol Corporate Accounting and Reporting Standard	Corporate-level GHG accounting framework for boundary setting and scope classification.

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18.4 Definitions & Abbreviations

Term / Abbreviation	Definition
CO₂e	Carbon dioxide equivalent – a standard unit to express the impact of all greenhouse gases (CO ₂ , CH ₄ , N ₂ O, etc.) using a common scale based on their Global Warming Potential (GWP).
GHG	Greenhouse Gases – gases that trap heat in the atmosphere, including CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, and SF ₆ .
Scope 1	Direct GHG emissions from sources owned or controlled by the organization (e.g., company vehicles, generators).
Scope 2	Indirect GHG emissions from purchased electricity, heating, cooling, or steam.
Scope 3	All other indirect emissions occurring in the value chain of the company (e.g., upstream logistics, business travel, waste, downstream transport).
DEFRA	UK Department for Environment, Food and Rural Affairs – publishes annual GHG conversion factors used widely for corporate reporting.
IPCC	Intergovernmental Panel on Climate Change – provides global science-based guidelines, emission factors, and GWP values.
ISO 14064-1	International Standard specifying principles and requirements for quantifying and reporting GHG emissions at the organizational level.
GHG Protocol	The Greenhouse Gas Protocol – the most widely used global framework for corporate greenhouse gas accounting and reporting.
GWP	Global Warming Potential – a measure of how much heat a GHG traps in the atmosphere compared to CO ₂ .
tCO₂e	Metric tonnes of carbon dioxide equivalent.
IEA	International Energy Agency – provides electricity and fuel emission factors used for national and regional assessments.

17.5 Reference Standards Used

1. ISO 14064-1:2018

Greenhouse gases – Part 1 (Organization-level GHG reporting)

 <https://www.iso.org/standard/66453.html>

2. GHG Protocol – Corporate Accounting and Reporting Standard
(World Resources Institute & WBCSD)

 <https://ghgprotocol.org/corporate-standard>

3. GHG Protocol – Scope 3 Accounting and Reporting Standard
(Value Chain Emissions)

 <https://ghgprotocol.org/standards/scope-3-standard>

4. IPCC 2006 Guidelines for National Greenhouse Gas Inventories
(Fuel combustion, refrigerants, methodologies)

 <https://www.ipcc-nggip.iges.or.jp/public/2006gl/>

5. IPCC AR5 / AR6 – Global Warming Potentials (GWPs)

 AR5: <https://www.ipcc.ch/report/ar5/>

 AR6: <https://www.ipcc.ch/report/ar6/wg1/>

6. UK DEFRA / DESNZ GHG Conversion Factors (Latest)
(Transport, waste, materials, logistics)

 <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

7. International Energy Agency (IEA) – Emission Factors
(Energy & transport supporting data)

 <https://www.iea.org/data-and-statistics>

8. ISO 14067:2018

(Carbon Footprint of Products – referenced for downstream logic)

 <https://www.iso.org/standard/71206.html>

 *Internal company documentation (not publicly accessible)*

9. EcoVadis – Environmental Reporting Methodology

 <https://ecovadis.com/methodology/>

ACKNOWLEDGEMENT OF RECEIPT

I confirm that I have received and reviewed this GHG Emission Report and understand my responsibility to comply with applicable requirements.

Name :

Signature :

Date :

