



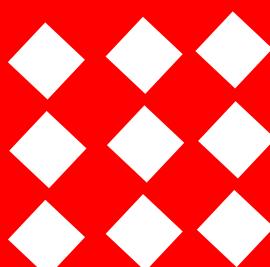
# GHG EMISSION REPORT

FORM NO : IFFCO/ESG/F-610

ISSUE NO : 01

REV NO : 00

DATE : 06<sup>th</sup> May, 2025



## 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 tCO<sub>2</sub>e
- Scope 1 Emissions: ~402.6 tCO<sub>2</sub>e
- Scope 2 Emissions: ~727.7 tCO<sub>2</sub>e
- Scope 3 Emissions: ~60,884 tCO<sub>2</sub>e

#### 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

## GHG EMISSION REPORT

### 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.

## GHG EMISSION REPORT

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### 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 (tCO<sub>2</sub>e) = 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
<b>Scope 1</b>	Diesel used in DG sets, furnaces and company vehicles; fuel combustion in utilities; refrigerant leakages from HVAC systems
<b>Scope 2</b>	Purchased electricity from UAE national grid for manufacturing, utilities and office operations
<b>Scope 3</b>	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 <sub>2</sub> e	Net Zero
Scope 2	727.7 tCO <sub>2</sub> e	Net Zero
Scope 3 – Upstream	55,861 tCO <sub>2</sub> e	Net Zero
Scope 3 – Downstream	5,023 tCO <sub>2</sub> e	Net Zero
Total Scope 3	60,884 tCO <sub>2</sub> e	Net Zero
Total Emissions	<b>62,014.3 tCO<sub>2</sub>e</b>	<b>Net Zero</b>

#### 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 <sub>2</sub> e)
Fuel combustion (DG, furnace, vehicles)	Aggregated fuel use	IPCC / DEFRA	402.6
<b>Total Scope 1</b>			<b>402.6</b>

#### Gas-wise Contribution – Scope 1

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

#### 9.2 Scope 2 – Indirect Energy Emissions

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

#### Gas-wise Contribution – Scope 2

Gas	Percentage of Scope (%)
CO <sub>2</sub>	727.7
CH <sub>4</sub>	0
N <sub>2</sub> O	0
<b>Total</b>	<b>727.7</b>

#### 9.3 Scope 3 – Other Indirect Emissions

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

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### Gas-wise Distribution – Scope 3

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

### 9.4 Summary Table – All Scopes Gas-Wise

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

## 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

## GHG EMISSION REPORT

### 11. EMISSION FACTORS

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

### 12. CALCULATION RESULTS

#### 12.1 Total GHG Emissions

Scope	Emissions (tCO <sub>2</sub> e)
Scope 1	402.6
Scope 2	727.7
Scope 3	60,884
<b>Total</b>	<b>62,014.3</b>

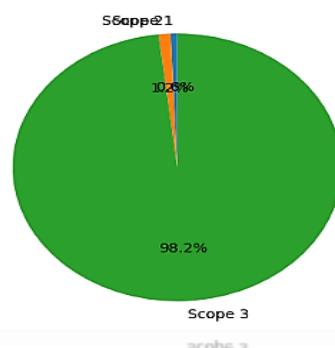
#### 12.2 Emission Intensity Indicators

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

#### 12.3 Emission Breakdown by Source

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

GHG Emissions by Scope (tCO<sub>2</sub>e)



## GHG EMISSION REPORT

### 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 tCOe**, 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

## GHG EMISSION REPORT

### 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 <sub>2</sub> e	55,861	Dataset	Scope 3
Downstream emissions	tCO <sub>2</sub> 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.

## GHG EMISSION REPORT

### 18.4 Definitions & Abbreviations

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

## GHG EMISSION REPORT

### 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-nccc.iges.or.jp/public/2006gl/>

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

☞ 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** :

