# Safex Chemicals India Ltd.

## Greenhouse Gas Inventory Report

**FY 2024-25**

**Consultant: Ecopurus**

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## Abbreviations

**GHG**: Greenhouse Gas

**GWP:** Global Warming Potential

**IPCC**: Intergovernmental Panel on Climate Change

**ISO**: International Organization for Standardization

**kWh**: Kilowatt hour

**UoM**: Unit of Measurement

**$tCO_2e$:** Tons of Carbon dioxide equivalent

**WBCSD**: World Business Council for Sustainable Development

**WRI:** World Resource Institute

**DEFRA:** Department for Environment, Food and Rural Affairs

**DISCOM** Distribution Company (Electricity)

**SAFEX** Safex Chemicals India Ltd

## Statement from MD

Dear Valued Stakeholders,

At Safex Chemicals India Ltd., we firmly believe that environmental responsibility is not just an obligation, but a fundamental pillar of long-term value creation. As we continue to grow and innovate in the agrochemical sector, our commitment to sustainability remains central to our purpose and operations.

During FY 2024–25, we have taken meaningful steps to strengthen our environmental practices, building on the foundation laid in previous years. Our structured approach to greenhouse gas (GHG) accounting has enabled us to measure our emissions with greater accuracy and identify opportunities for impactful reductions.

Looking ahead, we are aligning our sustainability strategy with both national goals and global frameworks. Our key priorities include:

- **GHG Reduction Targets**
  Safex is committed to setting clear and science-aligned targets to reduce its greenhouse gas emissions. Our strategy focuses on optimizing energy use, transitioning to cleaner energy sources, and promoting sustainable practices across our operations and supply chain—supporting our long-term vision for a low-carbon future.
- **Renewable Energy Procurement**
  As part of our transition to cleaner energy, Safex has initiated renewable energy adoption at few facilities. A key development is the ongoing commissioning of a solar plant at our Shogun facility, which will supply a significant portion of its electricity through solar power once operational. Additionally, our UK plant (Briar Chemicals) is powered by a 1.9 MW solar photovoltaic system, supported by a low-emission Combined Heat and Power (CHP) unit that meets nearly 80% of the site's energy demand. These initiatives mark important steps in reducing our carbon footprint and enhancing long-term energy resilience.

- **Third-Party Assessments and Certifications**
  **EcoVadis Sustainability Rating -**
  Safex has participated in the EcoVadis sustainability assessment to benchmark our ESG performance. This independent evaluation helps us identify improvement areas and align with global sustainability standards.

**Ecopurus Certification -**
To validate our renewable energy adoption, Safex has partnered with **Ecopurus** for third-party certification of energy-related emission reductions. This ensures credibility, transparency, and accountability in our reporting, while also recognizing the tangible environmental benefits achieved through clean energy integration.

- **Green Initiatives**
  Beyond renewable electricity, Safex is actively implementing broader green initiatives to reduce its environmental impact. Several of our facilities have transitioned to biofuels, including the use of firewood and bio-briquettes, as cleaner alternatives to conventional fuels. At our UK plant (Briar Chemicals), we utilize natural gas through a high-efficiency Combined Heat and Power (CHP) system, significantly improving energy efficiency while reducing emissions.

  These efforts are complemented by ongoing initiatives in resource optimization, waste reduction, and employee awareness programs, all aimed at building a more sustainable and environmentally conscious workplace.

These initiatives reflect our belief that sustainable progress requires transparency, collaboration, and a willingness to act. We are committed to sharing our journey through ongoing reporting and engagement with our stakeholders.

Thank you for your continued trust and support as we work toward a cleaner, more resilient, and sustainable future.

*Sincerely,*

***Neeraj Kumar Jindal***

***Managing Director***

***Safex Chemicals India Ltd.***

## Executive Summary

This Greenhouse Gas (GHG) Inventory Report for Safex Chemicals India Ltd. outlines the organization's Scope 1 and Scope 2 emissions for the financial year 2024–25, in alignment with the GHG Protocol Corporate Accounting and Reporting Standard. The boundary of the inventory is defined based on the operational control approach, covering direct and indirect energy-related emissions. For the reporting year, Safex Chemicals recorded an  of revenue, reflecting the company's carbon efficiency.

The summary of GHG emissions estimation from the sources covered under this reporting period are as follows:

### Scope wise GHG emissions:

*Table 1: Scope wise GHG emissions breakdown*

| GHG Emissions Sources | $tCO_2e$ |
|---|---|
| Direct GHG Emissions (Scope 1) | 14360.46 |
| Indirect GHG emissions from Imported Energy (Scope 2) (Market Based) | 4969.35 |
| **Total GHG Emission (tonne of $CO_2e$)** | **19,329.81** |

*Table 2: Biogenic Emissions*

| Biogenic Emissions | $tCO_2e$ |
|---|---|
| Biogenic Emissions | 5218.95 |

Safex Chemicals remains committed to improving environmental performance and aligning its operations with national and global climate goals.

# Chapter 1: About Safex Chemicals India Ltd.

Safex Chemicals India Ltd.[1], founded in 1991, stands as a prominent and trusted group in the Indian agrochemical industry. The company offers a robust portfolio of crop protection products including insecticides, herbicides, fungicides, and plant growth regulators, that address the diverse needs of farmers across the country and beyond.

With decades of experience, Safex has created a well-integrated supply chain model supported by cutting-edge R&D, environmentally responsible manufacturing, and an expansive distribution network. Its commitment to delivering innovative solutions with a strong focus on sustainability has earned Safex a distinguished reputation in both national and global markets.

Safex operates multiple manufacturing units along with a state-of-the-art R&D center. All facilities are aligned with regulatory norms and industry best practices to ensure high standards of safety, quality, and environmental compliance. The company continues to invest in clean technologies and sustainability-driven practices as part of its long-term business strategy.

As part of its commitment to environmental stewardship, Safex Chemicals has undertaken its first consolidated Greenhouse Gas (GHG) Inventory for FY 2024–25, aligned with international best practices and reporting standard i.e., GHG Protocol.

## 1.1 Purpose and Objective of Report

This Greenhouse Gas (GHG) Inventory Report has been prepared by Ecopurus to provide a transparent and accountable record of the company's emissions footprint for the reporting period FY 2024–25. The report captures and analyzes Scope 1 and Scope 2 emissions generated from its manufacturing operations and R&D facilities.

The core goals of this report include:

- **Environmental Performance Assessment:** To quantify GHG emissions arising from direct (fuel-based) and indirect (purchased electricity) sources, enabling the company to understand its overall environmental impact.

[1] www.safexchemicals.com

- **Regulatory and Framework Alignment:** To ensure reporting consistency with globally recognized standards such as the GHG Protocol and ISO 14064, in support of evolving compliance and disclosure needs.
- **Informed Decision-Making:** To provide accurate, reliable data that supports internal benchmarking, operational improvements, and the design of emissions reduction strategies.
- **Transparency with Stakeholders:** To enable disclosure of verified emissions data to stakeholders, including clients, and regulatory authorities, thereby strengthening the company's sustainability credentials.
- **Strategic Integration of Climate Action:** To embed emissions data into long-term business planning and sustainability initiatives, supporting India's climate goals and the global low-carbon transition.

This report lays the groundwork for measurable climate action and continuous environmental improvement within the organization.

## 1.2 Reporting Period

The reporting cycle for this GHG Inventory spans from **1st April 2024 to 31st March 2025**. This is the inaugural year of emissions reporting for Safex Chemicals under a formalized structure, and it establishes the company's baseline for future comparisons and goal setting.

## 1.3 Frequency of Reporting

Safex Chemicals has adopted an annual reporting cycle for its GHG emissions inventory to ensure regular monitoring, consistency in disclosures, and alignment with recognized sustainability frameworks.

Annual reporting supports timely integration of emissions data into internal decision-making processes, facilitates compliance with ESG requirements, and enhances readiness for third-party verification. As the company's sustainability journey evolves, the frequency or scope of reporting may be re-evaluated in response to business needs, stakeholder expectations, or regulatory mandates.

## 1.4 Policy on availability and methods of dissemination of the report.

Safex Chemicals follows a structured and controlled approach to disseminating its GHG emissions data, balancing transparency with the need for confidentiality and data integrity. The key aspects of this dissemination policy are outlined below:

- **Stakeholder Access:** The GHG report will be available to external stakeholders—such as rating agencies, clients, investors, and auditors—on a case-by-case basis, following formal requests to the company's sustainability team.
- **Distribution Method:** The report will be shared through official and secure communication channels such as email. Extracts or highlights may also be shared in corporate reports, ESG summaries, or presentations, based on relevance.
- **Report Format:** The official GHG Inventory will be published in PDF format. Editable or analyzable formats may be provided internally upon approval for specific review or audit purposes.
- **Confidentiality Assurance:** Sensitive operational or commercial data, where applicable, will be safeguarded in compliance with company policies and applicable standards, ensuring only relevant and authorized information is disclosed.
- **Intended Audience and Use:** This report is primarily intended for use by Safex's internal leadership, environmental teams, ESG partners, disclosure platforms and regulatory stakeholders. It forms a basis for internal performance evaluation, external disclosure, and emissions reduction planning.

This access framework ensures that Safex maintains a credible, transparent, and secure reporting environment while supporting sustainability leadership in the agrochemical sector.

## 1.5 Roles & Responsibilities

*Table 3: SAFEX responsible persons for this reporting period (FY 24-25)*

| Safex Chemicals India Ltd. | Responsibility |
|---|---|
| ***Mr. Neeraj Kumar Jindal*** | ***Managing Director*** |
| ***Mr. Ram Avtar Agarwal*** | ***Corporate EHS Head*** |

## 1.6 Contact Person

***Contact Person Name*** *: Mr. Ram Avtar Agarwal*

***Designation*** *: Corporate EHS Head*

***Email*** *: ram.agarwal@safexchemicals.com*

## 1.7 Key Information

*Table 4: Key Information's for GHG Emission Inventory*

| Attribute | Descriptions |
|---|---|
| **Company name** | Safex Chemicals India Ltd. |
| **Description of the company** | Agrochemical manufacturing and formulation |
| **Report Title** | Greenhouse Gas Inventory Report, FY 2024–25 |
| **Report Version** | Version 01 |
| **Date** | **20/07/2025** |
| **Controlled Report** | Yes |
| **Physical Location** | **Address:**<br>i. **Him Bio Agro Una:** Bathu Bathri Industrial Area, Tahliwal-Garhshankar Road, Tehsil Haroli, District Una, Himachal Pradesh-174301<br>ii. **Jaycee Life Sciences:** Plot No. 29-32, IID Centre, SICOP Industrial Estate, Govindsar, Kathua, Jammu & Kashmir - 184102<br>iii. **Safex Chemicals (India) Limited:** Plot No/Khasra No-Sp-14, Industrial Area, Keswanagujar (Kotputali), Jaipur, Rajasthan - 303108<br>iv. **Safex Chemicals (India) Limited:** PLOT NO 22, PLOT NO 22, I. I. D. CENTRE, BATTAL BALLIAN, Udhampur, Jammu and Kashmir, 182101<br>v. **Shogun Life Sciences** – Survey No. 717/3 \u0026 717/4, Post: Kathlal, Taluka: Kathlal, Dist. Kheda, - 387630 |

| | |
|---|---|
| | vi. **Shogun Organics** – Plot No. D-18, MIDC Kurkumbh, Taluka Daund, District Pune, Maharashtra<br>vii. **Briar Chemicals Ltd** – Norwich, United Kingdom, Sweet Briar Road, Norwich, NR6 5AP, United Kingdom |
| **The reporting period covered** | **1/04/2024 to 31/03/2025** |
| **GHG Emissions Sources Covered** | **Scope 1 Activities:**<br>• Stationary combustion<br>• Mobile Combustion<br>• Fugitive Emission<br>**Scope 2 Activities:**<br>• Indirect GHG emissions from Purchased electricity. (Market & Location based) |
| **Base Year** | **FY 2024–25 (First Reporting Year)** |
| **Prepared By** | **Ecopurus**<br>**Address:** 1106 A-B, Plot No.41, Iconic Tower – C Corenthum, Sector 62 Noida – 201301<br>**Contact Person:** Ms. Arti Sharma<br>**Email id:** arti@ecopurus.in<br>**Mobile no:** +91 7310773807 |
| **Approved By** | **Safex Chemicals India Ltd.**<br>**Address:** 4th & 5th Floor, Block A, NDM-1, Netaji Subhash Place, Delhi - 110034.<br>**Contact Person:** Mr. Ram Avtar Agarwal<br>**Email id:** *ram.agarwal@safexchemicals.com* |

## Chapter 2: Organizational Boundary

The organizational boundary for GHG Inventory reporting defines the scope within which an organization monitors its greenhouse gas emissions.

For this GHG inventory, Safex Chemicals India Ltd. has defined its organizational boundary based on the Operational Control approach. This means the company accounts for emissions from all facilities where it has full authority to introduce and implement operating policies including all its manufacturing units, R&D centers, and corporate office. Safex maintains valid environmental licenses for all these facilities and exercises complete control over operational practices and emissions management.

*Table 5: Organizational Boundary Approach*

| ***Which consolidation approach was chosen (check each consolidation approach for which your company is reporting emissions) If your company is reporting according to more than one consolidation approach, please complete and attach an additional completed reporting template that provides your company's emissions data following the other consolidation approach (es).*** | | |
|---|---|---|
| **Equity Share** ☐ | **Financial Control** ☐ | **Operational Control** ☒ |

## Chapter 3: Reporting Boundary

Safex Chemicals India Ltd.'s GHG Inventory Report is limited to emissions from operations under the company's direct control. These emissions have been categorized according to the GHG Protocol Corporate Accounting and Reporting Standard, focusing on Scope 1 and Scope 2 emissions only.

Safex Chemicals has identified and quantified all relevant emission sources within these scopes to ensure accuracy and completeness of its GHG emissions inventory. Scope 1 emissions cover direct emissions from owned and controlled sources, while Scope 2 emissions relate to indirect emissions from the generation of purchased electricity consumed at operational sites.

### Scope 1: Direct GHG Emissions

***Included GHG Emissions***

During this reporting period, the company has diligently pinpointed the emission sources that are covered within the reporting boundary. Specifically, these emissions comprise

- **Stationary combustion:** At Safex, the sources of emission from stationary combustion are-Diesel combustion in DG sets, Light Diesel Oil & PNG combustion in Boiler, and CH4 and N2O (non-$CO_2$) emissions from Bio-Briquettes and Firewood combustion.
- **Mobile Combustion:** At Safex, the sources of emission from mobile combustion are-Petrol, Diesel & CNG fuel use in company owned vehicles.
- **Fugitive Emission:** At Safex, the sources of fugitive emissions are from refrigerant refilling in Cooling equipment and $CO_2$ type fire extinguishers.

This category encompasses the following hotspots:

*Table 6: Scope 1 emission sources*

| Scope 1: Direct emissions from owned/controlled assets | Emissions identified | Emissions reported | Reason for omission |
|---|---|---|---|
| Stationary combustion | • Diesel consumption in DG Sets<br>• Furnace Oil consumption in Furnace<br>• PNG & LDO used in Boilers<br>• $CH_4$ and $N_2O$ (non-$CO_2$) emissions from Bio-Methane and Firewood combustion. | Yes | Included all the relevant emission source |
| Mobile combustion | • Fuel Consumption in company owned vehicle | Yes | Included all the relevant emission source |
| Fugitive Emission | • Refrigerants refilling in Air Conditioners<br>• $CO_2$ type fire extinguishers refilling | Yes | Included all the relevant emission source |

## Scope 2: Indirect GHG emissions from Purchased Electricity

***Included GHG Emissions***

Safex Chemicals India Ltd. purchases electricity for all its manufacturing and administrative units. Indirect emissions resulting from the generation of this electricity are accounted for under Scope 2. Monthly electricity consumption data, derived from utility bills, has been used to estimate Scope 2 emissions.

Safex Chemicals is currently exploring opportunities to shift to renewable energy sources to reduce its Scope 2 footprint.

Importance of Scope 2 Accounting for Safex:

- Purchased electricity is one of the key contributors to Safex's GHG profile.
- Monitoring Scope 2 emissions allows for better energy management and cost forecasting.
- Tracking electricity-related emissions helps the company align with national sustainability goals and upcoming compliance expectations.
- It provides a credible baseline for future emission reduction strategies and energy efficiency initiatives.

## Chapter 4: Quantified GHG Inventory of Emissions

Safex Chemicals India Ltd. has identified all applicable greenhouse gas (GHG) emission sources in line with the GHG Protocol Corporate Standard. These emissions have been classified into two relevant categories for this reporting period:

- **Scope 1**: Direct emissions from owned or controlled sources
- **Scope 2**: Indirect emissions from purchased electricity

**Note:** Scope 3 emissions are not included in this reporting cycle and will be addressed in future disclosures.

### Selection of Quantification Methodology and Emission Factors

Safex Chemicals India Ltd. prioritizes environmental responsibility by adhering to the Greenhouse Gas Protocol, a standard developed by the World Resources Institute and the World Business Council for Sustainable Development. This comprehensive framework guides all the definitions, assumptions, and calculations used in Safex's GHG inventory report.

*Table 7: GHG accounting methodology*

| Scope and category | Description of the methodologies | Emission Factors | Sources of activity data |
|---|---|---|---|
| **Scope 1: Direct GHG Emissions** | Safex identifies all operational sources, including stationary combustion (e.g., DG sets), mobile combustion (e.g., company vehicles), process emissions, and fugitive emission. Emissions are calculated using a consumption-based approach. | Emission factors taken from several sources to ensure accuracy. Safex uses data from DEFRA-2024, the IPCC's Sixth Assessment Report (AR-6). They also consider the 100-year global warming potential (GWP) for specific gases like methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), sulfur | SAP record, Log books, Vehicle and Maintenance Records |

| | | | |
|---|---|---|---|
| | | hexafluoride (SF6), and perfluorocarbons (PFCs) when reporting emissions. Notably, emissions of CH4 and N2O from fuel combustion are calculated using factors obtained from DEFRA. | |
| **Scope 2: Purchased Electricity (location-based)** | The company calculates electricity-related emissions using location-based factors representing the average emission intensity of regional power grids. | CEA Database Version 20.0 (Dec 2024) for regional grid intensity | Electricity Bills |
| **Scope 2: Purchased Electricity (market-based)** | Where supplier-specific data or RECs exist, emissions are quantified using market-based factors derived from contractual agreements. | Supplier-provided emission factors or fallback to regional averages from CEA v 20.0 | Electricity bills, supplier contracts |

## 4.1 Quantification of Direct GHG Emissions (Scope 1)

For estimation of GHG emissions from sources that are identified in section 3.1 of this report, **consumption-based approach** is used.

*GHG Emission ($tCO_2e$) = Activity Data * Emission Factor*

The following tables present a detailed breakdown of Safex's Scope 1 GHG emissions. The data is presented in two formats:

- **Consolidated Locations:** This table summarizes the total GHG emissions from all Safex's facilities combined, categorized by each emission categories.
- **Location-Wise Breakup:** This table provides a more granular view, detailing the emissions from each source at each individual facility operated by Safex.

This comprehensive approach offers a clear understanding of Safex's overall Scope 1 emissions and allows for informed decision-making regarding emission reduction strategies across all locations.

## A. Consolidated quantification of all locations for Scope 1 emission:

*Table 8: Overall Scope 1 emissions breakdown*

| Monitoring Parameter | UOM | Total Activity Data | Emissions Factors | | | | Emissions | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | kg CO2e of CO2 | kg CO2e of CH4 | kg CO2e of N2O | kg CO2e | t-CO2 | t-CH4 | t-N2O | t-CO2eq. |
| **Stationary combustion** | | | | | | | | | | |
| Diesel consumption in DG Sets | litres | 48386 | 2.63 | 0.00 | 0.03 | 2.66 | 127.17 | 0.01 | 1.60 | 128.78 |
| Any other: LDO in Boiler | litres | 320630 | 2.63 | 0.00 | 0.03 | 2.66 | 842.67 | 0.09 | 10.61 | 853.37 |
| Any other: LPG consumption in process | Ton | 0.097 | 2935.18 | 2.55 | 1.63 | 2939.36 | 0.28 | 0.00 | 0.00 | 0.29 |
| Any other: Natural Gas consumption | Ton | 5135.36 | 2585.42 | 3.85 | 1.19 | 2590.46 | 13277.08 | 19.79 | 6.12 | 13302.99 |
| **Total Stationary combustion** | | | | | | | **14247.21** | **19.89** | **18.33** | **14285.43** |
| **Mobile combustion (Company owned vehicles)** | | | | | | | | | | |
| Petrol Consumption | Liters | 1079.68 | 2.34 | 0.01 | 0.01 | 2.35 | 2.53 | 0.01 | 0.01 | 2.54 |
| Diesel consumption | Liters | 25344.56 | 2.63 | 0.00 | 0.03 | 2.66 | 66.61 | 0.01 | 0.84 | 67.46 |
| CNG Consumption | Ton | 1.00 | 2563.12 | 3.85 | 1.19 | 2568.16 | 2.57 | 0.00 | 0.00 | 2.57 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Mobile combustion** | | | | | | | **71.702** | **0.020** | **0.846** | **72.568** |
| **Fugitive emissions** | | | | | | | | | | |
| **R-134A** | Kg | 0.5 | | | | 1300 | | | | 0.65 |
| **R-22** | Kg | 1 | | | | 1760 | | | | 1.76 |
| **CO2 type fire extinguishers refilling** | Kg | 58.5 | | | | 1 | | | | 0.06 |
| **Total Fugitive combustion** | | | | | | | | | | **2.47** |
| **Total Scope-1 (For all Locations)** | | | | | | | **14318.91** | **19.91** | **19.17** | **14360.46** |

## B. Location-Wise quantification for Scope 1 emission:

*Table 9: Scope 1 emissions breakdown – Him Bio Agro Una*

| Him Bio Agro Una | | | | | | |
|---|---|---|---|---|---|---|
| **Monitoring Parameter** | **UOM** | **Total Activity Data** | **Total Emissions** | | | |
| | | | **t-$CO_2$** | **t-$CH_4$** | **t-$N_2O$** | **t-$CO_2e$** |
| **Stationary combustion** | | | | | | |
| Diesel consumption in DG Sets | liters | 3300.00 | 8.67 | 0.00 | 0.11 | 8.78 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |
| Petrol consumption | liters | 200.94 | 0.47 | 0.00 | 0.00 | 0.47 |
| **Fugitive emissions** | | | | | | |
| R-22 | kgs | 0.50 | 0.00 | 0.00 | 0.00 | 0.65 |
| R134A | kgs | 0.50 | 0.00 | 0.00 | 0.00 | 0.88 |
| CO2 type fire extinguishers refilling | kgs | 13.50 | 0.00 | 0.00 | 0.00 | 0.01 |
| **Total Scope-1 (Him Bio Agro, Una)** | | | **9.14** | **0.00** | **0.11** | **10.80** |

*Table 10: Scope 1 emission breakdown – Jaycee Life Sciences*

| Jaycee Life Sciences, Kathua | | | | | | |
|---|---|---|---|---|---|---|
| **Monitoring Parameter** | **UOM** | **Total Activity Data** | **Total Emissions** | | | |
| | | | **t-$CO_2$** | **t-$CH_4$** | **t-$N_2O$** | **t-$CO_2e$** |
| **Stationery combustion** | | | | | | |
| Diesel consumption in DG Sets | liters | 4127 | 10.85 | 0.00 | 0.14 | 10.98 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Petrol consumption | liters | 722.21 | 0.24 | 0.00 | 0.00 | 0.24 |
| Diesel consumption | liters | 100.92 | 1.90 | 0.00 | 0.02 | 1.92 |
| **Fugitive emissions** | | | | | | |
| R-22 | kgs | 0.50 | 0.00 | 0.00 | 0.00 | 0.88 |
| **Total Scope-1 (Jaycee Life Sciences, Kathua)** | | | **11.08** | **0.00** | **0.14** | **14.02** |

*Table 11: Scope 1 emission breakdown – Safex Chemicals (India) Ltd. Udhampur*

| **Safex Chemicals (India) Ltd. Udhampur** | | | | | | |
|---|---|---|---|---|---|---|
| **Monitoring Parameter** | **UOM** | **Total Activity Data** | **Total Emissions** | | | |
| | | | **t-$CO_2$** | **t-$CH_4$** | **t-$N_2O$** | **t-$CO_2e$** |
| **Stationery combustion** | | | | | | |
| Diesel consumption in DG Sets | liters | 9772 | 25.68 | 0.00 | 0.32 | 26.01 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |
| Petrol consumption | liters | 233.98 | 0.24 | 0.00 | 0.00 | 0.55 |
| **Total Scope-1 (Safex Chemicals (India) Ltd. Udhampur)** | | | **25.92** | **0.00** | **0.32** | **26.56** |

*Table 12: Scope 1 emission breakdown – Safex Chemicals (India) Ltd. Keshawn*

| **Safex Chemicals (India) Ltd. Keshawn** | | | | | | |
|---|---|---|---|---|---|---|
| **Monitoring Parameter** | **UOM** | **Total Activity Data** | **Total Emissions** | | | |
| | | | **t-$CO_2$** | **t-$CH_4$** | **t-$N_2O$** | **t-$CO_2e$** |
| **Stationery combustion** | | | | | | |
| Diesel consumption in DG Sets | liters | 24000 | 63.08 | 0.01 | 0.79 | 63.88 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |
| Petrol consumption | liters | 159.19 | 0.37 | 0.00 | 0.00 | 0.37 |
| Diesel consumption | liters | 12117.1 | 31.85 | 0.00 | 0.40 | 32.25 |

| | | | | |
|---|---|---|---|---|
| **Total Scope-1** | **95.29** | **0.01** | **1.20** | **96.50** |

*Table 13 : Scope 1 emission breakdown – Shogun Life Sciences Pvt. Ltd., Kathlal*

| **Shogun Life Sciences Pvt. Ltd., Kathlal** | | | | | | |
|---|---|---|---|---|---|---|
| **Monitoring Parameter** | **UOM** | **Total Activity Data** | **Total Emissions** | | | |
| | | | **t-$CO_2$** | **t-$CH_4$** | **t-$N_2O$** | **t-$CO_2e$** |
| **Stationery combustion** | | | | | | |
| Diesel consumption in DG Sets | Liters | 2093.00 | 5.50 | 0.00 | 0.07 | 5.57 |
| LPG consumption in process | tons | 0.097 | 0.285 | 0.00 | 0.00 | 0.29 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |
| Petrol consumption | Liters | 67.00 | 0.16 | 0.00 | 0.00 | 0.16 |
| | | | | | | |
| **Total Scope-1 (Shogun Life Sciences Pvt. Ltd., Kathlal)** | | | **5.94** | **0.00** | **0.07** | **6.01** |

*Table 14 : Scope 1 emission breakdown – Shogun Organics Ltd., Kurkumbh*

| **Shogun Organics Ltd., Kurkumbh** | | | | | | |
|---|---|---|---|---|---|---|
| **Monitoring Parameter** | **UOM** | **Total Activity Data** | **Total Emissions** | | | |
| | | | **t-$CO_2$** | **t-$CH_4$** | **t-$N_2O$** | **t-$CO_2e$** |
| **Stationary combustion** | | | | | | |
| Diesel consumption in DG Sets | liters | 5094 | 13.39 | 0.00 | 0.17 | 13.56 |
| Any other: LDO in Boiler | liters | 320630 | 842.67 | 0.09 | 10.61 | 853.37 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |
| Petrol consumption | liters | 196 | 0.46 | 0.00 | 0.00 | 0.46 |
| Diesel consumption | liters | 9126 | 23.98 | 0.00 | 0.30 | 24.29 |
| CNG | tons | 1.001 | 2.57 | 0.004 | 0.001 | 2.57 |
| **Fugitive emissions** | | | | | | |
| CO2 type fire extinguishers refilling | | 27 | 0.00 | 0.00 | 0.00 | 0.03 |
| **Total Scope-1 (Shogun Organics Ltd., Kurkumbh)** | | | **880.50** | **0.10** | **11.08** | **894.28** |

*Table 15: Scope 1 emission breakdown – Briar Chemical Ltd.*

| Briar Chemical Ltd. | | | | | | |
|---|---|---|---|---|---|---|
| **Monitoring Parameter** | **UOM** | **Total Activity Data** | **Total Emissions** | | | |
| | | | **t-$CO_2$** | **t-$CH_4$** | **t-$N_2O$** | **t-$CO_2e$** |
| **Stationery combustion** | | | | | | |
| Natural Gas | tons | 5135.37 | 13286.25 | 19.79 | 6.23 | 13302.99 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |
| Petrol consumption | liters | 121.65 | 0.28 | 0 | 0 | 0.29 |
| Diesel consumption | liters | 3379.25 | 8.88 | 0 | 0.11 | 8.99 |
| **Total Scope-1 (Briar Chemical)** | | | **13295.16** | **19.79** | **6.34** | **13312.27** |

## Summary of Scope 1 Emissions:

*Table 16: Unit-wise Scope 1 emissions breakdown*

| Source | Him Bio Agro Una | Jaycee Life Sciences, Kathua | Safex Chemicals (India) Ltd. Udhampur | Safex Chemicals (India) Ltd. Keshwana | Shogun Life Sciences Pvt. Ltd. Kathlal | Shogun Organics Ltd. Kurkumbh | Briar Chemical. Norwich | Total |
|---|---|---|---|---|---|---|---|---|
| **Stationary Combustion** | 8.78 | 10.98 | 26.01 | 63.88 | 5.72 | 866.93 | 13302.99 | 14285.29 |
| **Mobile Combustion** | 0.47 | 2.16 | 0.55 | 32.62 | 0.158 | 27.32 | 9.28 | 72.56 |
| **Fugitive emissions** | 1.5435 | 0.88 | | | | 0.03 | | 2.45 |
| **Total** | **10.80** | **14.02** | **26.56** | **96.50** | **5.88** | **894.28** | **13312.27** | **14360.31** |

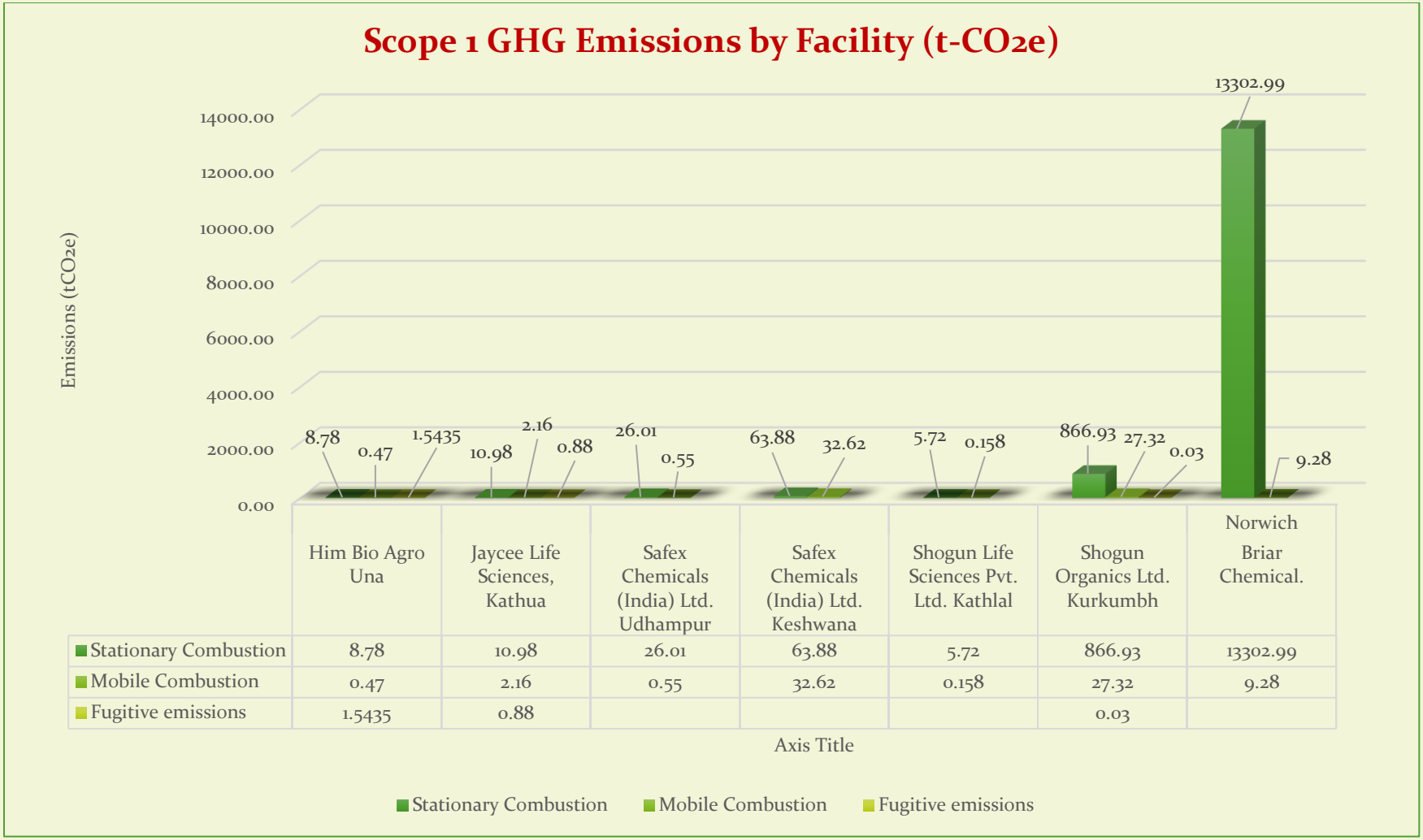


*Figure 1 Facility wise Scope 1 Emissions*

Safex's total Scope 1 emissions amount to **14,360.46 $tCO_2e$**, with the majority arising from stationary combustion activities (**14,285.29 $tCO_2e$**). The largest contributions come from operations at Briar Chemicals, Norwich, and Shogun Organics Ltd., Kurkumbh, primarily due to fuel use in boilers and other stationary equipment. Mobile combustion from company-owned vehicles accounts for **72.56 $tCO_2e$**, while fugitive emissions contribute **2.45 $tCO_2e$**.

## 4.2 Quantification of Indirect GHG emissions from Purchased Electricity (Scope 2)

Under Scope 2 emissions, Safex has reported the emissions from the generation of purchased electricity that is consumed in its owned or controlled equipment or operations. The Indirect GHG emissions related to the consumption of electricity imported to the reporting organization for the Indian Grid has been calculated in this section. The emission factor for the electricity imported from the grid is estimated from the CEA database (version 20.0) following the methodology given in CDM TOOL07 "Tool to calculate emission factor for and electricity system" version 07.0. The tool provides method to calculate combined margin emission factor as a weighted average of operation margin and build margin emission factors of grid.

The estimation of GHG emissions due to Electricity Consumption from the grid is performed by **consumption-based approach**.

*Total GHG Emission ($tCO_2e$) = Total Electricity Consumption (kWh) * Emission Factor ($tCO_2/kWh$)*

The following tables present a detailed breakdown of Safex Chemicals India Ltd. Scope 2 GHG emissions. The data is presented in two formats:

- Consolidated Locations
- Location-Wise Breakup

### A. Consolidated quantification of all locations for Scope 2:

*Table 17: Overall Scope 2 emissions breakdown*

| Monitoring Parameter | UOM | Total Activity Data | Emission Factor | Emissions |
|---|---|---|---|---|
| **India Location** | | | **kg CO2** | **t-CO2e** |
| Purchased Electricity from Grid (Market Based) | kWh | 5608014.7 | 0.727 | 4077.027 |
| Purchased Electricity from Grid (Location Based) | kWh | 5608014.7 | 0.727 | 4077.027 |
| **UK Location** | | | **kg CO2** | **t-CO2e** |
| Purchased Electricity from Grid (Market Based) | kWh | 4310759 | 0.207 | 892.327 |
| Purchased Electricity from Grid (Location Based) | kWh | 4687242 | 0.207 | 970.259 |
| **Total Scope-2 (For all Locations) (Market Based)** | | | | **4969.354** |
| **Total Scope-2 (For all Locations) (Location Based)** | | | | **5047.286** |

### B. Location-Wise quantification of Scope 2 emission:

*Table 18: Scope 2 emissions breakdown Him Bio Agro Una*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| **Location Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 1043900 | 0 | 0 | 0 | 758.92 |
| **Total Scope-2 Emission (Locations Based)** | | | | | | **758.92** |
| **Market Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 1043900 | 0 | 0 | 0 | 758.92 |
| **Total Scope-2 Emission (Market Based)** | | | | | | **758.92** |

*Table 19: Scope 2 emissions breakdown Jaycee Life Sciences, Kathua*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| **Location Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 831918.8 | - | - | - | 604.80 |
| **Total Scope-2 Emission (Locations Based)** | | | | | | **604.80** |
| **Market Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 831918.8 | - | - | - | 604.80 |
| **Total Scope-2 Emission (Market Based)** | | | | | | **604.80** |

*Table 20: Scope 2 emissions breakdown Safex Chemicals (India) Ltd. Udhampur*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| **Location Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 126894.4 | - | - | - | 92.25 |
| **Total Scope-2 Emission (Locations Based)** | | | | | | **92.25** |
| **Market Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 126894.4 | - | - | - | 92.25 |
| **Total Scope-2 Emission (Market Based)** | | | | | | **92.25** |

*Table 21: Scope 2 emissions breakdown Safex Chemicals (India) Ltd., Keshwana*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| **Location Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 351601.8 | - | - | - | 255.61 |
| **Total Scope-2 Emission (Locations Based)** | | | | | | **255.61** |
| **Market Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 351601.8 | - | - | - | 255.61 |
| **Total Scope-2 Emission (Market Based)** | | | | | | **255.61** |

*Table 22: Scope 2 emissions breakdown Shogun Life Sciences Pvt.Ltd. Kathlal*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| **Location Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 90514.7 | - | - | - | 65.80 |
| **Total Scope-2 Emission (Locations Based)** | | | | | | **65.80** |
| **Market Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 90514.7 | - | - | - | 65.80 |
| **Total Scope-2 Emission (Market Based)** | | | | | | **65.80** |

*Table 23: Scope 2 emissions breakdown Shogun Organics Ltd. Kurkumbh*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| **Location Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 3163185 | 0 | 0 | 0 | 2299.64 |
| **Total Scope-2 Emission (Locations Based)** | | | | | | **2299.64** |
| **Market Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 3163185 | 0 | 0 | 0 | 2299.64 |
| **Total Scope-2 Emission (Market Based)** | | | | | | **2299.64** |

*24: Scope 2 emissions breakdown Briar Chemical Ltd*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| **Location Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 4310759 | - | - | - | 892.33 |
| Purchased Renewable power consumption | kWh | 376483 | - | - | - | 77.93 |
| **Total Scope-2 Emission (Locations Based)** | | | | | | **970.26** |
| **Market Based** | | | | | | |
| Purchased Electricity from Grid | kWh | 4310759 | - | - | - | 892.33 |
| **Total Scope-2 Emission (Market Based)** | | | | | | **892.33** |

## Summary of Scope 2 Emissions:

*Table 25: Unit-wise Scope 2 emissions breakdown*

| Scope | Him Bio Agro Una | Jaycee Life Sciences, Kathua | Safex Chemicals (India) Ltd. Udhampur | Safex Chemicals (India) Ltd. Keshwana | Shogun Life Sciences Pvt. Ltd., Kathlal | Shogun Organics Ltd., Kurkumbh | Briar Chemical, Norwich | Total Emissions ($tCO_2$) |
|---|---|---|---|---|---|---|---|---|
| **Scope 2 emissions (Location Based)** | 758.92 | 604.80 | 92.25 | 255.61 | 65.80 | 2299.64 | 970.49 | **5047.28** |
| **Scope 2 emissions (Market Based)** | **758.92** | **604.80** | **92.25** | **255.61** | **65.80** | **2299.64** | **892.54** | **4969.34** |

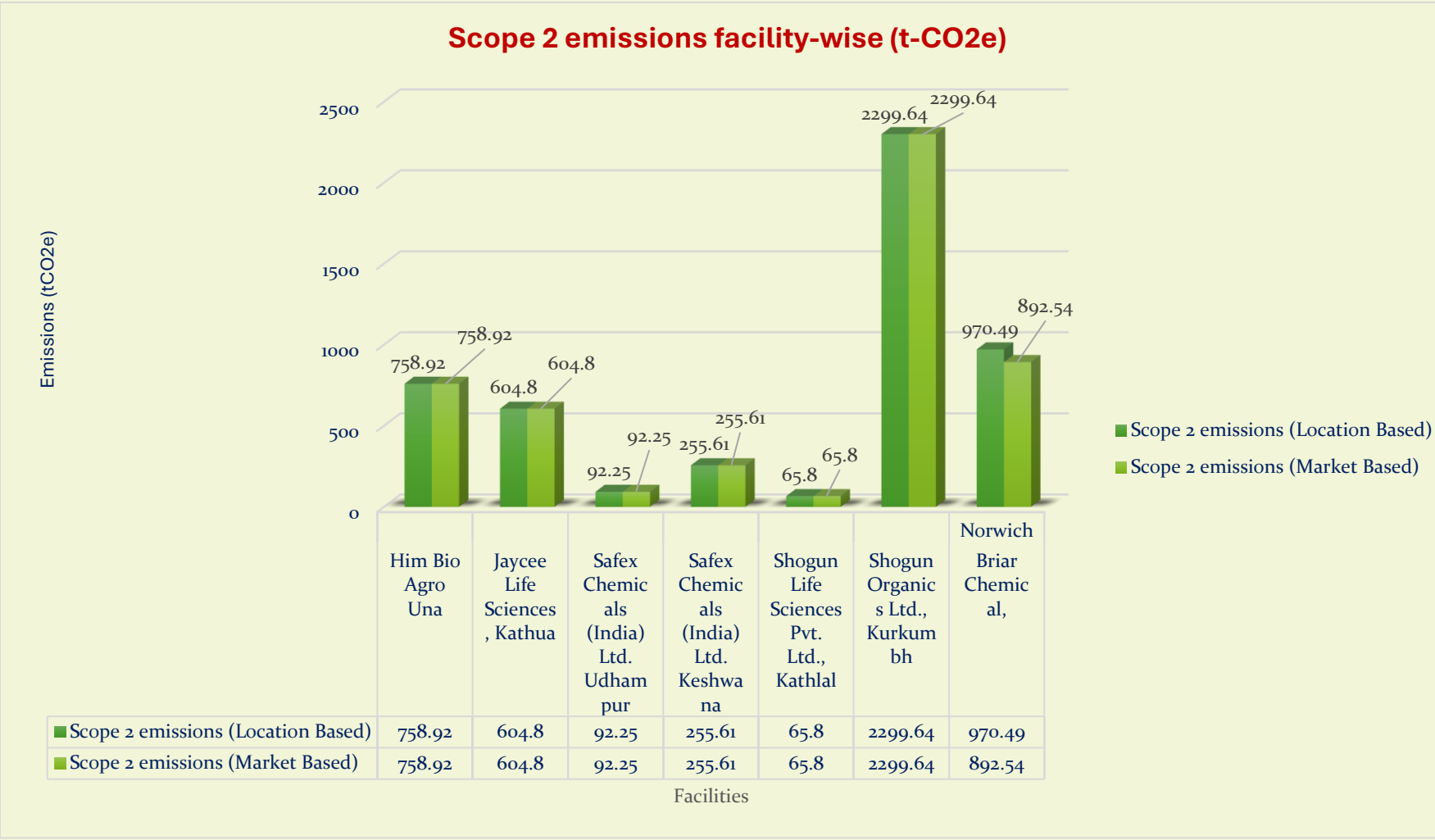


*Figure 2: Facility wise Scope 2 Emissions*

## 4.3 Biogenic emissions

Biogenic emissions refer to carbon dioxide ($CO_2$) emissions resulting from the combustion of biomass-based fuels, such as biogas or other biologically derived materials. At Safex Chemicals, biogenic $CO_2$ emissions are generated from the combustion of biomass-based fuels used in two of its operational facilities. These fuels include bio-methane and agricultural biomass residues, which are utilized as part of the site's energy requirements. In accordance with international GHG reporting guidelines, these emissions are reported separately from fossil fuel-based Scope 1 emissions, as they originate from renewable biological source.

**A. Consolidated quantification for all locations:**

*Table 26: Overall Biogenic emissions*

| Monitoring Parameter | UOM | Total Activity Data | Total Emissions | | | |
|---|---|---|---|---|---|---|
| | | | $t\text{-}CO_2$ | $t\text{-}CH_4$ | $t\text{-}N_2O$ | $t\text{-}CO_2e$ |
| Firewood | kg | 1320000 | - | - | - | 2310 |
| Mixed Biomass | kg | 1662260 | - | - | - | 2908.955 |
| **Total Emissions through Biogenic activity** | | | | | | **5218.955** |

Safex Group's total biogenic emissions amount to 5218.95 t-CO2.

## Chapter 5: Summary

Following the above-mentioned calculations methods, the GHG inventory estimation are done for the following scopes i.e., Scope 1 & Scope 2.

***Quantification of GHG sources***

*Table 27: Emission Summary*

| GHG Emissions Scopes | t-$CO_2e$ | Contribution (%) |
|---|---|---|
| Scope 1 | 14360.46 | 74% |
| Scope 2 Market based | 4969.35 | 26% |
| **Scope 1 +2 (Market based)** | **19,329.81** | |

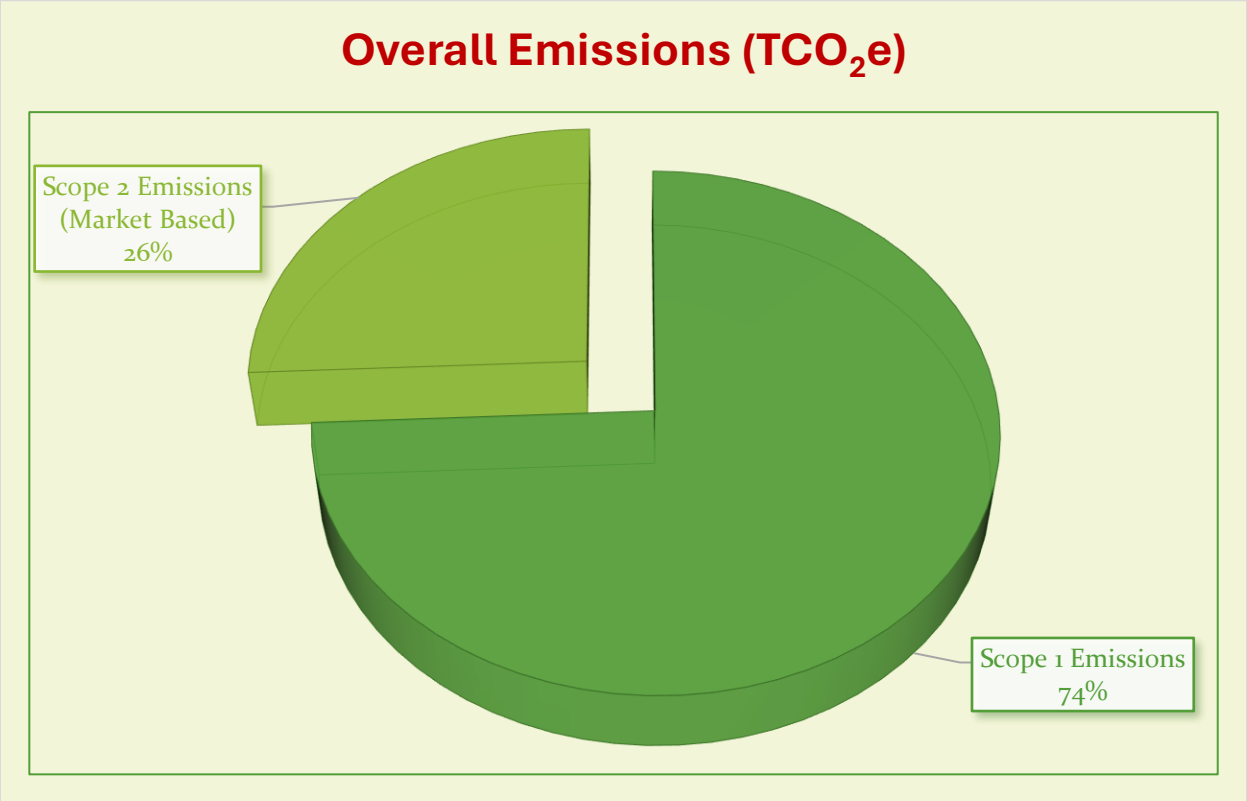


*Figure 3: Overall GHG Emissions*

## Chapter 6: Emission Factors

*Table 28: Emission factors and source*

| Monitoring Category | UOM | Emission Factor | | | | Emission Factor Source |
|---|---|---|---|---|---|---|
| | | kg-CO2 | kg-CH4 | kg-N2O | kg-CO2e | |
| **Scope 1** | | | | | | |
| **Stationary combustion** | | | | | | |
| Diesel consumption in DG Sets | liters | 2.63 | 0.00 | 0.03 | 2.66 | DEFRA 2024 |
| LPG consumption in canteen | tons | 2.94 | 0.00 | 0.00 | 2.94 | DEFRA 2024 |
| Furnace Oil | tons | 3.22 | 0.01 | 0.01 | 3.23 | DEFRA 2024 |
| Firewood & Mixed Biomass | kg | - | - | - | 0.05 | DEFRA 2024 |
| **Mobile combustion (Company owned vehicles)** | | | | | | |
| Petrol Consumption | liters | 2.33 | 0.01 | 0.01 | 2.35 | DEFRA 2024 |
| Diesel consumption | liters | 2.63 | 0.00 | 0.03 | 2.66 | DEFRA 2024 |
| **Fugitive emissions** | | | | | | |
| R404A | kg | - | - | - | 3922 | DEFRA 2024 |
| R-134A | kg | - | - | - | 1430 | DEFRA 2024 |
| R-22 | kg | - | - | - | 1810 | DEFRA 2024 |
| R-32 | kg | - | - | - | 675 | DEFRA 2024 |
| R410A | kg | - | - | - | 2088 | DEFRA 2024 |
| CO2 type fire extinguishers refilling | kg | - | - | - | 1 | DEFRA 2024 |
| **Process emissions** | | | | | | |
| CO2 emission from Fermentation process | kg | - | - | - | 1 | DEFRA 2024 |
| | | | | | | |
| **Scope 2 emissions** | | | | | | |
| Purchased Electricity from Grid (India) | kWh | - | - | - | 0.727 | CEA_V.20 |
| Purchased Renewable power consumption (India) | kWh | - | - | - | 0.727 | CEA_V.20 |
| Purchased Electricity from Grid (UK) | kWh | - | - | - | 0.207 | DEFRA 2024 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Purchased Renewable power consumption (UK) | kWh | - | - | - | 0.207 | DEFRA 2024 |
| **Biogenic emissions** | | | | | | |
| Firewood | kg | - | - | - | 1.75 | IPCC 2019 (Refinement to 2006) |

## Chapter 7: GHG Information Management procedures for Document Retention and Record keeping

The GHG (Greenhouse Gas) information management procedures for document retention and record keeping Safex Chemicals India Ltd are designed to ensure the comprehensive and secure handling of documents related to our GHG emissions, reduction efforts, and sustainability initiatives. These procedures are integral to maintaining transparency, compliance, and the ability to monitor our environmental impact over time. Key components of our document retention and record keeping procedures include:

**Data Collection and Documentation:** We systematically collect and document data pertaining to GHG emissions from diverse sources within our organization. This data is meticulously recorded, specifying the source, time frame, and the nature of emissions. The data collection and documentation procedure in which all documents related to GHG inventory, emissions data, calculations, and reports are classified based on their importance, relevance, and regulatory requirements. Documents are categorized into primary and secondary records, with primary records being critical for GHG inventory verification. Documents are stored in a secure and controlled environment, whether in physical or electronic format, to prevent unauthorized access, loss, or damage. Electronic documents are stored in a dedicated, password-protected, and access-controlled document management system.

**Supporting Documentation:** In addition to emissions data, we retain supporting documentation that substantiates our reported figures. This may include invoices, energy bills, fuel consumption records, and other relevant evidence.

**Reporting Schedule:** Our organization follows a defined reporting schedule, which can be periodic (e.g., annual). During this process, we compile emissions data from various departments and sources within the company.

**Structured Record Keeping:** All records related to GHG emissions, calculations, and reports are diligently organized, categorized, and labeled in accordance with our internal information management procedures.

**Retention Period:** Safex Chemicals India Ltd. has established a specific retention period for GHG-related records. This retention period is informed by regulatory requirements, industry best practices, and our internal policies.

**Data Security and Access Control:** To safeguard the integrity of our records, we maintain stringent data security measures. Access to these records is carefully controlled and restricted to authorized personnel only.

**Compliance and Auditing:** Our record keeping practices align with regulatory requirements and facilitate internal and external audits. Independent auditors may review our records to verify the accuracy of emissions data and reduction claims.

**Continuous Improvement:** Beyond compliance, our records support our ongoing commitment to improvement. Historical data allows us to identify trends, evaluate the effectiveness of our reduction initiatives, and make data-driven decisions for future sustainability efforts.

Safex Chemicals India Ltd, our GHG information management procedures for document retention and record keeping are pivotal in maintaining data accuracy, promoting transparency, ensuring accountability, and facilitating our commitment to sustainable practices.

## Appendix:

### A. Base Year GHG Inventory

This report encompasses data collected during the operational period from April 1, 2024, to March 31, 2025. This represents the inaugural year of Safex Chemicals India Ltd. GHG reporting efforts. Consequently, FY 2024-25 is designated as the baseline year for Safex's GHG inventory accounting. All future GHG accounting and emission reduction targets will be established using this baseline data.

### B. Uncertainty Assessment

The emissions reported within this GHG Inventory Report are derived from records meticulously maintained by Safex Chemicals India Ltd. throughout its operational period. This data collection serves as a crucial initiative for monitoring the company's GHG footprint.

To ensure comprehensive accounting, employee commuting emissions were incorporated through a company-wide survey capturing commute distances and travel modes utilized by each employee.

Furthermore, emission factors employed for calculations were meticulously sourced from reputable references such as the IPCC 2023 (AR6), DEFRA's 2024 GHG Conversion Factors for Company Reporting, and other publicly available resources. Consequently, the uncertainties considered by the IPCC are directly applicable to the current GHG inventory.

The IPCC Reports establish a default uncertainty range of plus or minus 5% for fossil fuel combustion data. This translates to the following interpretation:

- The value obtained from energy statistics or the energy balance is considered the point estimate for the activity data.
- The lower limit of the 95% confidence interval is calculated as 95% of the point estimate.
- The upper limit of the 95% confidence interval is calculated as 105% of the point estimate.

## References:


1. *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*
2. *http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html*
3. *http://www.ghgprotocol.org/calculation-ves/all-tools*
4. *http://www.wri.org/*
5. *https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf*
6. *CDM - CO2 Baseline Database - Central Electricity Authority (cea.nic.in)*
7. *https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf*
8. *https://safexchemicals.com/*
9. *https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2024*
10. *https://catalog.data.gov/dataset/supply-chain-greenhouse-gas-emission-factors-v1-2-by-naics-6*