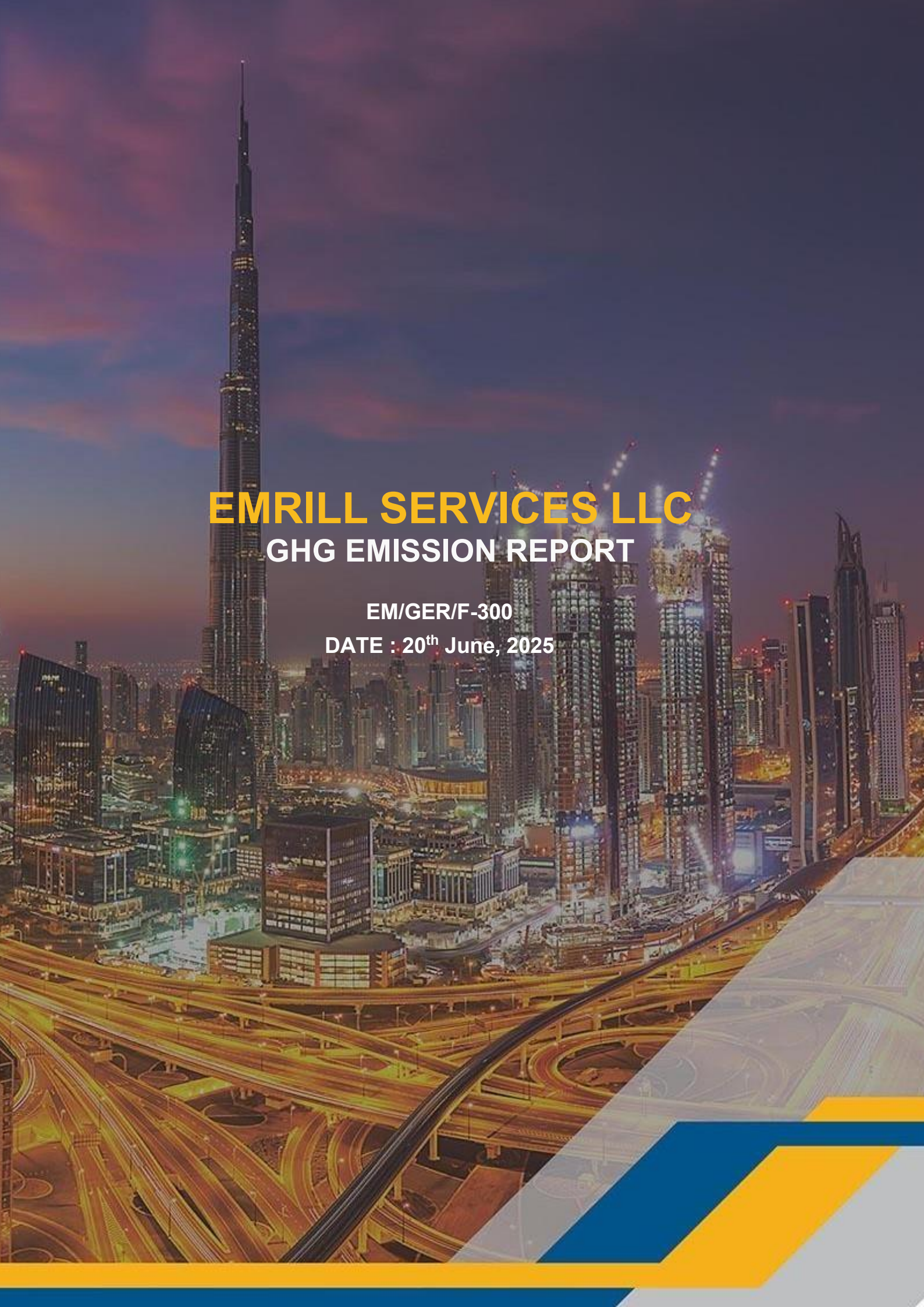


# EMRILL SERVICES LLC

## GHG EMISSION REPORT

**EM/GER/F-300**

**DATE : 20th June, 2025**

# Survey 1. EXECUTIVE SUMMARY

### 1.1 Overview

Emrill Services LLC is a leading integrated facilities management company in the UAE providing hard FM, soft FM, cleaning services, security, MEP maintenance, energy management, sustainability solutions, and specialized FM operations across commercial, residential, hospitality, industrial, and infrastructure sectors.

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

### 1.2 Key Emission Results (2024)

| Scope | Emissions ($tCO_2e$) |
|---|---|
| Scope 1 | 2,320 |
| Scope 2 | 2,450 |
| Scope 3 Total | 75 |
| Scope 3 Upstream | 75 |
| Scope 3 Downstream | 0 |
| **Total** | **4,845 $tCO_2e$** |

### 1.3 Highlights & Reduction Achievements

- Implemented energy efficiency projects at managed facilities (HVAC optimization, LED retrofits).
- Reduced fuel consumption through route planning and GPS-based fleet management.
- Increased adoption of green cleaning solutions and low-emission materials.
- Conducted staff sustainability training to reduce electricity and fuel use.
- Initiated pilot EV/Hybrid fleet deployment.

# 2. INTRODUCTION

### 2.1 Purpose

To quantify, document, and disclose Emrill's carbon footprint for 2024 in accordance with ISO 14064-1:2018 and the GHG Protocol (Corporate Standard).

### 2.2 Intended Users

- UAE regulators
- Clients and partners
- Investors and internal management
- ESG auditors and rating agencies

### 2.3 Reporting Objectives

- Establish 2024 as Emrill's organizational baseline
- Improve transparency and support ESG reporting
- Enable target-setting and reduction planning
- Support client sustainability requirements

## 3. GHG EMISSIONS SUMMARY

### 3.1 Organizational Boundaries

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

| |
|---|
| Boulevard point |
| OTR |
| Burj Crown |
| Princess Tower |
| Marina Arcade |
| Nshama |
| IBN Battuta Mall |
| Nakheel - FM |
| Dubai Healthcare City |
| Arada Sharjah-Nest |
| DFC Mall |
| The Greens |
| Dubai Creek Harbour |
| Dubai Creek Beach |
| ENI – Dubai-Coral |
| Emirates Living |
| Main Village |

### 3.2 Reporting Boundary & Scope Definition

| Scope | Included Activities | Justification |
|---|---|---|
| **Scope 1** | Fleet fuel combustion, diesel equipment, refrigerant leakage | Emrill has operational control |
| **Scope 2** | Purchased electricity at offices & FM sites | Major energy contributor |
| **Scope 3 Upstream** | Purchased goods, staff commuting, business travel, fuel & electricity upstream emissions | Material for FM sector |

### 3.3 Scope 3 Category Inclusion Table

| Category | Included | Justification |
|---|---|---|
| Purchased goods & services | Not included | Cleaning consumables & materials |
| Fuel & energy-related activities | Not included | T&D losses |
| Upstream transport | Not included | Vendor supply chain |
| Waste | Not included | FM waste operations |
| Business travel | Yes | Staff movement |
| Employee commuting | Not included | Daily travel |
| Downstream distribution | No | Service business (not applicable) |
| End-of-life treatment of sold products | No | Emrill sells no goods |

## 4. ORGANIZATION DESCRIPTION

### 4.1 Company Profile

Emrill provides integrated FM services including cleaning, security, technical services, HVAC maintenance, energy management, green building services, and sustainability upgrades.

### 4.2 Organizational Structure

Centralized Sustainability & ESG Team managing operational reporting across UAE FM sites.

### 4.3 Facilities & Boundaries

FM sites in Dubai, Abu Dhabi, Sharjah, RAK, including offices, service centers, and fleet operations.

# 5. REPORTING BOUNDARY

### 5.1 Organizational Boundary

Emrill applies the **Operational Control Approach** as per ISO 14064-1 and the GHG Protocol.

### Organizational Boundary (Control / Equity / Operational Control):

**Control Approach:** Operational Control

Emrill accounts for 100% of emissions from activities and sites where it has direct operational control over energy use, fleet operations, procurement, and service delivery.

Emissions from client-controlled facilities are included **only when Emrill manages the electricity or fuel consumption directly**.

### 5.2 Operational Boundary

The operational boundary includes **all direct and indirect GHG emission sources** relevant to Emrill's integrated facility management operations.

**Included Scopes & Activities**

| Scope | Included Activities |
|---|---|
| **Scope 1 – Direct Emissions** | Fuel consumption from Emrill-owned/controlled fleet, onsite equipment, generators, refrigerant leakage |
| **Scope 2 – Indirect Energy Emissions** | Purchased electricity for offices, accommodation, and FM sites under Emrill's operational control |
| **Scope 3 – Other Indirect Emissions** | Upstream: purchased goods, staff commuting, business travel, waste disposal, supplier transport; Downstream: minimal (service-based operations) |

**Excluded Sources**

- Downstream distribution (not applicable to service-based FM)
- Client-owned energy or fuel consumption (outside Emrill's control)
- Capital goods (unless directly purchased by Emrill)

### 5.3 Entities and Locations Covered

This GHG inventory includes all operational activities under Emrill's control across the UAE:

**Operational Facilities Covered**

- Emrill Dubai Head Office
- Abu Dhabi Operational Office
- Service Centers & Workshops
- Residential FM Sites (Dubai, Abu Dhabi, Sharjah)

- Commercial FM Sites (malls, offices, mixed-use properties)
- Industrial FM Sites (logistics, warehouses)
- Hospitality & Leisure Facilities
- Transport Fleet Operations (Light & Heavy Vehicles)
- Staff Accommodation Facilities (where utilities are controlled by Emrill)

# 6. Reporting Period

### 6.1 Start Date and End Date

The GHG reporting period for this inventory is:

**1 January 2024 – 31 December 2024**

This covers a full calendar year of operational data.

### 6.2 Frequency of Reporting

Emrill follows the following reporting frequency:

- Annual GHG Emission Reporting
- Data is collected monthly, validated quarterly, and consolidated annually
- Results are reviewed by Emrill's ESG & Sustainability Committee each year
- Full GHG report is issued once every 12 months

# 7. GHG ACCOUNTING METHODOLOGY

### 7.1 Standards Followed

- ISO 14064-1:2018
- GHG Protocol Corporate Standard

### 7.2 Method Formula

- **Activity Data × Emission Factor = $CO_2e$**

### 7.3 Tools Used

- Utility bills
- Fleet fuel logs
- Supplier invoices
- Excel calculation models

# 8. EMISSION SOURCES IDENTIFICATION

## 8.1 Direct & Indirect Sources

| Scope | Sources |
|---|---|
| Scope 1 | Diesel/petrol vehicles, generators, refrigerant leaks |
| Scope 2 | Purchased grid electricity |
| Scope 3 | Business travel |

## 8.2 GHG Emission Baseline & Targets

**Baseline Year: 2024**

| Category | Baseline Emissions ($tCO_2e$) 2024 |
|---|---|
| Scope 1 | 2,320 |
| Scope 2 | 2,450 |
| Scope 3 Upstream | 75 |
| Total Emissions | 4,845 |

**2030 Reduction Targets (Aligned with UAE Net Zero 2050 Pathway)**

| Category | Baseline 2024 | Target 2030 | Reduction % |
|---|---|---|---|
| Scope 1 | 2,320 | 1,392 | 40% reduction |
| Scope 2 | 2,450 | 1,225 | 50% reduction |
| Scope 3 Upstream | 75 | 45 | 40% reduction |
| Scope 3 Downstream | 0 | 0 | Maintain zero |

**Total Emission Target for 2030:**

**From 4,845 → 2,662 $tCO_2e$ (≈ 45% reduction)**

## 8.3 Mapping of Emission Sources in Facilities

| Facility / Activity Area | Emission Sources | Scope Mapping |
|---|---|---|
| A. Offices & Administrative Facilities | - Grid electricity (lighting, HVAC, IT equipment)<br>- Refrigerant leakage (AC systems)<br>- Waste disposal | Scope 2, minor Scope 1, Scope 3 |
| B. FM Operational Sites (Residential, Commercial, Hospitality, Industrial) | - Electricity consumption (if Emrill controls meter)<br>- Fuel-operated maintenance equipment | Scope 1, Scope 2, Scope 3 (mixed depending on |

| | | |
|---|---|---|
| | - Cleaning & housekeeping chemicals<br>- Waste handling | operational control) |
| C. Fleet & Transport Operations | - Diesel/petrol use in vans, pickups, service vehicles<br>- Route-based transport emissions | Major Scope 1 |
| D. Workshops & Service Centers | - Electricity consumption (tools, machinery)<br>- Refrigerant leakage from HVAC servicing | Scope 1 + Scope 2 |
| E. Staff Accommodation (If utilities under Emrill control) | - Grid electricity<br>- Water heating systems | Scope 2 |
| F. Purchased Goods & Consumables | - Cleaning chemicals<br>- Tools & equipment<br>- PPE, consumables | Scope 3 Upstream |
| G. Employee Commuting | - Daily travel by bus, private vehicles, public transport | Scope 3 Upstream |
| H. Business Travel | - Domestic travel<br>- Regional air/road travel | Scope 3 Upstream |
| I. Waste Handling | - General waste<br>- Recyclable waste | Scope 3 Upstream |

### 8.4 Scope Categorization

| Scope | Emission Category / Source | Description |
|---|---|---|
| Scope 1 – Direct Emissions | Fleet Fuel Combustion | Diesel/petrol used in Emrill-owned/controlled vehicles, vans, pickups, service cars |
| | Equipment Fuel Use | Generators (if used), pressure washers, technical FM equipment |
| | Refrigerant Leakage | Leakage from AC servicing, HVAC systems at Emrill-controlled facilities |
| Scope 2 – Indirect Energy Emissions (Purchased Electricity) | Grid Electricity | Electricity consumed at offices, service centers, FM-operated sites |
| | Lighting & HVAC Loads | Major contributor to electricity use in administrative buildings |
| | Emission Factor | UAE Grid Factor (DEWA / AADC / SEWA) |
| Scope 3 – Other Indirect Emissions (Value Chain) | Upstream Transportation | Supplier transport, delivery of materials and consumables |
| | Purchased Goods & Services | Cleaning chemicals, tools, equipment, PPE, materials |
| | Employee Commuting | Daily staff travel via bus, private vehicles, public transport |

| | | |
|---|---|---|
| | Business Travel | Domestic and regional road/air travel for operations & management |
| | Waste Disposal | General waste, recyclables from offices and FM-controlled sites |
| | Electricity T&D Losses | Grid transmission & distribution losses linked to Scope 2 |
| Downstream Emissions | Minimal / Not Applicable | Service-based business; Emrill does not sell products |

# 9. GHG SCOPE CLASSIFICATION

### 9.1 Scope 1 – Direct Emissions (2,320 $tCO_2e$)

**Includes:**

- Fleet diesel/petrol consumption
- Maintenance machinery
- Refrigerant gas refills

**GHG Scope Classification – Gas-Wise List**

**GHG Gases Included:**

| Gas | Source |
|---|---|
| $CO_2$ (Carbon Dioxide) | Fuel combustion in fleet vehicles, service vans, diesel/petrol equipment |
| $CH_4$ (Methane) | Minor emissions from incomplete diesel/petrol combustion |
| $N_2O$ (Nitrous Oxide) | Emitted from diesel engines and fuel combustion equipment |
| HFCs (Hydrofluorocarbons) | Leakage from refrigerant gas refills in AC/HVAC systems (e.g., R410A, R134a, R407C) |

### 9.2 Scope 2 – Indirect Electricity Emissions (2,450 $tCO_2e$)

**Includes:**

- Office buildings
- FM sites with electricity under Emrill operational control

**GHG Gases Included (embedded in UAE grid electricity):**

| Gas | Source |
|---|---|
| **$CO_2$** | Electricity generated from natural gas-based power plants |
| **$CH_4$** | Natural gas extraction, transmission, and combustion |
| **$N_2O$** | Thermal power generation processes |

### 9.3 Scope 3 – Other Indirect Emissions (75 $tCO_2e$)

**Includes:**

- Purchased consumables
- Commuting
- Business travel
- Waste

**GHG Gases Included (value chain activities):**

| Gas | Source |
|---|---|
| $CO_2$ | Purchased goods, consumables, commuting, business travel, waste disposal |
| $CH_4$ | Waste decomposition (where applicable), transport activities |
| $N_2O$ | Transport-related emissions (staff commuting, air travel) |

**Short Gas-Wise Summary**

| Scope | $CO_2$ | $CH_4$ | $N_2O$ | HFCs |
|---|---|---|---|---|
| **Scope 1** | ✓ | ✓ | ✓ | ✓ (refrigerants) |
| **Scope 2** | ✓ | ✓ | ✓ | ✗ |
| **Scope 3** | ✓ | ✓ | ✓ | ✗ |

## 10. GHG DATA COLLECTION & QUALITY

### 10.1 Data Sources & Collection Method

Emrill collected activity data from all operational areas under its control using standardized procedures.

**Data Sources**

- Fuel consumption logs for fleet vehicles and equipment
- Electricity bills from DEWA, AADC, SEWA, FEWA
- Refrigerant refill logs from maintenance teams
- Supplier invoices for cleaning materials, chemicals, tools
- Business travel records from HR & Admin
- Employee commuting survey (average distance + mode of transport)
- Waste disposal receipts and internal waste logs
- Operational site meter readings

**Collection Method**

- Monthly data collection from departments
- Quarterly validation by ESG Team
- Consolidation into central GHG Excel model
- Conversion to $tCO_2e$ using approved emission factors

### 10.2 Accuracy, Completeness & Reliability

| Parameter | Rating | Notes |
|---|---|---|
| **Accuracy** | Medium–High | Based on actual bills and logs; some commuting estimates used |
| **Completeness** | High | All major scopes and sources covered |
| **Reliability** | High | Verified through internal audits and cross-checks |

### 10.3 Data Management Procedure & Controls

- Internal Excel model maintained by ESG Analyst
- Version-controlled logs to track updates and corrections
- Cross-validation with invoices, utility bills, tracking systems
- Approval by Sustainability Manager and Finance Head
- Monthly review meetings with Operations and HSE teams

## 11. EMISSION FACTORS

### 11.1 Source of Emission Factors

- IPCC 2006 Guidelines – Fuel combustion
- DEFRA 2024 Factors – Road transport, waste, air travel
- UAE National Grid Emission Factors (DEWA/AADC/SEWA) – Electricity
- GHG Protocol – Commuting, T&D losses

### 11.2 Units & Justification

| Parameter | Unit | Justification |
|---|---|---|
| Diesel / Petrol | kg $CO_2e$/L | Standard IPCC/DEFRA unit for combustion-based sources |
| Electricity | kg $CO_2e$/kWh | Required for Scope 2 calculations |
| Air Travel | kg $CO_2e$/passenger-km | DEFRA methodology |
| Waste | kg $CO_2e$/kg | IPCC waste sector factors |

# 12. CALCULATION RESULTS

## 12.1 Total GHG Emissions (By Scope ($tCO_2e$))

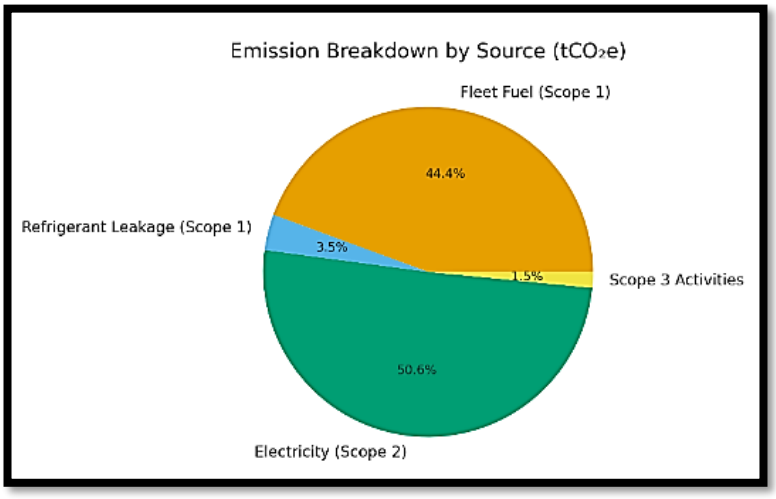
| Scope | Emissions |
|---|---|
| Scope 1 | 2,320 |
| Scope 2 | 2,450 |
| Scope 3 | 75 |
| **Total Carbon Footprint** | **4,845 $tCO_2e$** |

### Gas-wise Breakup for Scope 1

| Gas | Emission Source | Included? |
|---|---|---|
| **$CO_2$** | Fuel combustion (major contribution) | ✓ |
| **$CH_4$** | Incomplete diesel/petrol combustion | ✓ |
| **$N_2O$** | Fuel combustion | ✓ |
| **HFCs** | Refrigerant leakage | ✓ |

## 12.2 Emission Breakdown by Source

| Source Category | Emissions ($tCO_2e$) | % Contribution |
|---|---|---|
| Fleet Fuel (Scope 1) | 2,150 | 44% |
| Refrigerant Leakage (Scope 1) | 170 | 4% |
| Electricity (Scope 2) | 2,450 | 51% |
| Scope 3 Activities | 75 | 1% |
| **Total** | **4,845** | **100%** |



### 12.3 Emission Intensity Indicators

| Indicator | Value |
|---|---|
| $CO_2e$ per employee | 4,845 / employees (insert number if available) |
| $CO_2e$ per sq. ft. (FM-operated) | Total emissions ÷ Total managed sq. ft. |
| $CO_2e$ per service output unit | Can be added based on KPIs |

## 13. BASE YEAR & TREND ANALYSIS

### 13.1 Base Year Selection & Justification

- 2024 selected as base year
- First year with standardized, verified GHG inventory data

### 13.2 Historical Comparison

- No historical trend for prior years
- Trend analysis will begin from 2025 onward

### 13.3 Adjustment Considerations

**Any change in:**

- Number of FM sites
- Fleet expansion
- Organizational mergers/divestments

will require base-year recalculation as per GHG Protocol.

## 14. UNCERTAINTY ASSESSMENT

### 14.1 Sources of Uncertainty

- Estimated staff commuting distances
- Business travel approximations for some departments
- Assumed refrigerant leakage volumes when exact logs are missing

### 14.2 Method Used

- ±10% variation used for uncertainty analysis
- Cross-checked through invoice and usage patterns

### 14.3 Confidence Level

- Moderate to High

# 15. DATA QUALITY ASSESSMENT

## 15.1 Activity Data Quality Rating

| Parameter | Rating | Notes |
|---|---|---|
| Fuel consumption logs | High | Recorded electronically |
| Electricity bills | Very High | Utility-originated |
| Refrigerant data | Medium | Some estimates |
| Commuting data | Medium | Based on survey |
| Business travel | High | HR provides actual records |

## 15.2 Cross-Checks & Validations

- Consistency check between fleet logs and fuel invoices
- Electricity consumption compared with historical patterns
- Business travel reconciled with HR approval records

# 16. GHG REDUCTION INITIATIVES

## 16.1 Energy Efficiency Programs

- LED upgrades
- HVAC optimization (set-point control, VFDs)
- Smart metering installation
- Energy audits across large FM sites

## 16.2 Fleet & Fuel Reduction Initiatives

- Fleet route optimization
- GPS-enabled tracking
- Pilot EV/Hybrid deployment
- Anti-idling programs

## 16.3 Waste & Water Reduction Measures

- Recycling stations at offices & FM sites
- Paperless operations
- Water-efficient cleaning practices

## 16.4 Future Sustainability Goals

- 40% Scope 1 reduction by 2030
- 50% Scope 2 reduction by 2030
- 40% Scope 3 upstream reduction by 2030
- Increase renewable energy use (solar & green power)

# 17. CONCLUSIONS

### 17.1 Summary of GHG Performance

- Total emissions for 2024: **4,845 $tCO_2e$**
- Major contributor: **Electricity (Scope 2)**
- Second largest: **Fleet fuel (Scope 1)**

### 17.2 Success & Opportunities

- Strong data collection system
- Established baseline year
- Opportunities: fleet electrification, solar adoption, procurement optimization

### 17.3 Plan for Next Reporting Period

- Improve data accuracy for commuting & refrigerants
- Implement digital sustainability dashboard
- Expand renewable energy usage
- Add more FM site-level energy tracking

# 18. APPENDICES

### 18.1 Activity Data Tables

This section includes the raw activity data used to calculate GHG emissions for Scope 1, Scope 2, and Scope 3.

Included Activity Data:

- **Fuel Consumption:**
  Monthly diesel/petrol used by fleet vehicles, generators, and equipment.
- **Electricity Consumption:**
  Monthly kWh units from DEWA/AADC/SEWA/FEWA bills for offices and FM-controlled sites.
- **Refrigerant Refill Logs:**
  Quantity (kg) of refrigerant gases used for AC/HVAC servicing.
- **Business Travel Distance:**
  Road and air travel distances for management and operations teams.
- **Employee Commuting Distance:**
  Estimated km travelled daily by staff using buses, private vehicles, or public transport.
- **Waste Quantities:**
  General waste, recyclables, and any waste handled under Emrill's operational control.

### 18.2 Calculation Sheets

Contains all computational steps used to convert activity data into GHG emissions.

Included Calculations:

- **Activity × EF × GWP Calculations:**
  Standard formula used for fuel, refrigerants, electricity, and waste.
- **Gas-wise Calculations:**
  Separate calculations for $CO_2$, $CH_4$, $N_2O$, and HFCs where applicable.
- **Final Scope Totals:**
  Consolidated emissions for:
  - **Scope 1: Direct Emissions**
  - **Scope 2: Electricity Emissions**
  - **Scope 3: Value Chain Emissions**

### 18.3 Emission Factor References

Emission factors were sourced from credible international and regional databases.

**Sources Used:**

- IPCC 2006 Guidelines:
  Fuel combustion and refrigerant gas emission factors.
- DEFRA 2024 Conversion Factors:
  Used for road transport, air travel, waste, and general emission calculations.
- UAE Grid Emission Factor:
  National electricity grid factor used for Scope 2 calculations.
- GHG Protocol Database:
  Factors for business travel, commuting, and T&D losses.

### 18.4 Definitions & Abbreviations

| Term | Definition |
|---|---|
| **$CO_2e$** | Carbon dioxide equivalent – common unit for expressing emissions. |
| **Scope 1** | Direct emissions from controlled sources (fuel, refrigerants). |
| **Scope 2** | Indirect emissions from purchased electricity. |
| **Scope 3** | Other indirect value-chain emissions (travel, waste, procurement). |
| **GWP** | Global Warming Potential – multiplier to convert gases into $CO_2e$. |
| **EF** | Emission Factor – unit measure to convert activity to emissions. |
| **Operational Control** | Reporting boundary where Emrill controls operations and energy use. |
| **Upstream Emissions** | Emissions from purchased goods, supplier transport, and commuting. |
| **Downstream Emissions** | Emissions after services are delivered (minimal for EMRILL). |

### 18.5 Reference Standards Used

These standards and guidelines were applied throughout the GHG inventory process:

1. **ISO 14064-1:2018 – Organizational GHG Quantification & Reporting**
   https://www.iso.org/standard/66453.html
2. **GHG Protocol – Corporate Accounting and Reporting Standard**
   https://ghgprotocol.org/corporate-standard
3. **GHG Protocol – Scope 3 / Value Chain Standard (Full PDF)**
   https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf
4. **GHG Protocol – Scope 2 Electricity Emissions Guidance (PDF)**
   https://ghgprotocol.org/sites/default/files/2023-03/Scope%202%20Guidance.pdf
5. **IPCC 2006 GHG Inventory Guidelines (Main Source for Emission Factors)**
   https://www.ipcc-nggip.iges.or.jp/public/2006gl/
6. **GHG Protocol – Calculation Tools & Worksheets**
   https://ghgprotocol.org/calculation-tools-and-guidance

7. **DEFRA 2024 UK Government Conversion Factors**
https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
8. **ISO 14064 Series Overview (General Explanation)**
https://greenly.earth/en-gb/blog/company-guide/iso-14064-objectives-and-requirements
9. **Practical Guide for Calculating GHG Emissions (General PDF Guide)**
https://canviclimatic.gencat.cat/web/.content/04_ACTUA/Com_calcular_emissions_GEH/guia_de_calcul_demissions_de_co2/190301_Practical-guide-calculating-GHG-emissions_OCCC.pdf
10. **ISO 14064-1:2018 Alternate Official Access Link**
https://www.evs.ee/en/iso-14064-1-2018