



METAC GENERAL CONTRACTING COMPANY LLC

**HEAD OFFICE: - 01, 1ST FLOOR, BUILDING 09-AR, PLOT NO. 30, MUSSAFAH-M3,
ABU DHABI, "UNITED ARAB EMIRATES".**

**DUBAI BRANCH OFFICE: - P.O BOX 38373, FLAT NO. 606 TOWERA,
EMPIRE HEIGHTS BUILDING BUSINESS BAY, DUBAI, UNITED ARAB EMIRATES.**

GHG EMISSION REPORT

Form No : METAC/ESG/F-620

Issue No : 02

Rev No : 00

Date : 14th May, 2025



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1. EXECUTIVE SUMMARY

Overview:

METAC is a leading UAE-based Engineering, Procurement and Construction (EPC) company operating across Oil & Gas, Infrastructure and Building sectors. The company integrates ESG principles into operational activities and has developed this GHG Emission Report for the 2024 calendar year to support transparency, sustainability compliance and client requirements.

Key Emission Results (2024):

Scope	Emissions (tCO ₂ e)
Scope 1 (Direct)	6,122.55
Scope 2 (Indirect Energy)	2,499.02
Scope 3 (Other Indirect)	4,898.04
Total GHG Emissions	13,519.61

Highlights & Reduction Achievements:

- Optimised generator operation and preventive maintenance reduced unnecessary diesel burn.
- Vehicle routing optimisation and improved fuel monitoring enhanced fleet fuel efficiency.
- Electricity usage reduction measures implemented in offices & site cabins.
- Supplier engagement initiated to understand upstream material emissions.
- Energy-conscious behaviour programs rolled out at project sites.

2. INTRODUCTION

2.1 Purpose:

To quantify and report METAC's annual greenhouse gas emissions and establish a baseline for future improvements, aligned with ISO 14064-1 and the GHG Protocol.

2.2 Intended Users:

Management, clients, ESG auditors, regulatory authorities, lenders and sustainability stakeholders.

2.3 Reporting Objectives:

Voluntary reporting aligned with client requirements, internal ESG strategies, tender pre-qualification requirements, and ISO 14064-1 compliance.



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3. GHG EMISSIONS SUMMARY

3.1 Organizational Boundaries

This GHG Emission Report covers all UAE operations under METAC's control:

- Head Office: Mussafah – Abu Dhabi (Plot No. 30)
- Dubai Branch
- Construction project sites across UAE
- Fleet and transport operations
- Temporary site facilities & worker accommodations

3.2 Reporting Boundary & Scope Definition

Scope	Included Activities	Justification
Scope 1	Direct GHG emissions from METAC-owned vehicles, diesel generators, construction machinery (cranes, loaders, tankers), and refrigerant leakage from HVAC systems	METAC has full operational control over its fleet, equipment, and site-based generators used in EPC and construction projects
Scope 2	Indirect GHG emissions from purchased electricity across offices, worker accommodations, and project sites	Operations rely heavily on grid electricity for construction activities, lighting, HVAC, and office operations
Scope 3	Upstream & downstream indirect GHG emissions: procurement of construction materials, subcontractor activities, logistics, employee commuting, business travel, waste disposal	Activities occur outside direct control but are significant contributors within METAC's EPC value chain
Scope 3 – Upstream	Purchased goods & services, subcontractor works, transport of raw materials, fabrication activities, and supplier operations	Major material inputs (steel, cement, aggregates, chemicals), subcontractors, and logistics create significant upstream emissions
Scope 3 – Downstream	Transportation of completed project components, use-phase energy requirements of constructed assets (if applicable), demolition and end-of-life disposal	Downstream activities influence emissions beyond METAC's control but remain material in the construction life cycle



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3.3 Scope 3 Category Inclusion Table

SL. No	Scope 3 Category	Included (Yes/No)	Justification (METAC-specific)
1	Purchased Goods & Services	Yes	Construction materials such as steel, cement, aggregates, chemicals, pipes, cables, and MEP components are major upstream emission sources in EPC projects
2	Capital Goods	No	No major new machinery, cranes, or vehicles were procured during the reporting period
3	Fuel & Energy-Related Activities (not in Scope 1 & 2)	Yes	Includes upstream emissions from diesel extraction/refining and transmission & distribution losses for electricity used at project sites
4	Upstream Transportation & Distribution	Yes	Raw materials and equipment are transported from suppliers to METAC sites across UAE
5	Waste Generated in Operations	Yes	Construction waste, scrap metal, cement bags, chemical containers, and packaging materials are generated during EPC operations
6	Business Travel	Yes	Employees travel for project coordination, supplier meetings, inspections, and client discussions within UAE and internationally
7	Employee Commuting	Yes	Daily commuting of 2,582 employees using buses, cars, and shared transport contributes to emissions
8	Upstream Leased Assets	No	Only company-owned or operational-control assets are used; no upstream leased assets outside METAC's boundary
9	Downstream Transportation & Distribution	Yes	Transport of fabricated components, construction modules, and project materials delivered to client sites
10	Processing of Sold Products	No	METAC delivers constructed infrastructure as turnkey projects; no further processing by clients
11	Use of Sold Products	No	EPC projects do not involve products requiring operational energy from METAC after handover
12	End-of-Life Treatment of Sold Products	Yes	Demolition waste and decommissioning of constructed facilities generate GHG emissions
13	Downstream Leased Assets	No	METAC does not own or manage downstream leased assets
14	Franchises	No	METAC does not operate any franchise model
15	Investments	No	No investment activities that contribute to GHG emissions



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4. ORGANIZATION DESCRIPTION

4.1 Company Profile:

METAC is an EPC contractor executing Engineering, Procurement and Construction works in Oil & Gas, Industrial, Infrastructure and Building sectors across the UAE.

4.2 Organizational Structure:

Head Office based in Abu Dhabi with projects and operational teams deployed across UAE. Central support functions include Engineering, Procurement, Construction Management, QHSE, HR and Finance.

4.3 Operations, Facilities & Boundaries:

- Head Office – Abu Dhabi
- Dubai Branch – Business Bay
- Multiple project sites (varies annually)

The 2024 GHG inventory covers office-based and operationally controlled activities.

5. REPORTING BOUNDARY

Organizational Boundary:

Operational Control approach – METAC reports emissions from activities where it exercises control over operations, energy use and transport.

Operational Boundary:

Included:

- Company-owned vehicles
- Electricity consumption
- Upstream & downstream value-chain emissions (as per provided dataset)

Entities Covered:

METAC – UAE operations.

6. REPORTING PERIOD

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



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7. GHG ACCOUNTING METHODOLOGY

7.1 Standards Followed:

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

7.2 Calculation Formula:

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

7.3 Tools Used:

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

8. EMISSION SOURCES IDENTIFICATION

8.1 Direct & Indirect Sources

Scope	Sources Included
Scope 1	Diesel in vehicles, DG sets, machinery, refrigerant leakages
Scope 2	Purchased electricity
Scope 3	Upstream logistics, downstream delivery, business travel, commuting, waste, purchased materials

8.2 GHG Emission Baseline & Targets

Category	2024	Target 2025	Target 2030
Scope 1	6,122.55	5%	Net Zero
Scope 2	2,499.02	5%	Net Zero
Scope 3 Upstream	3,428.62	5%	Net Zero
Scope 3 Downstream	1,469.41	5%	Net Zero
Total Scope 3	4,898.04	5%	Net Zero
Total	13,519.61	5%	Net Zero

8.3 Mapping to Facilities

- **Electricity:** Offices, labour camps, site cabins
- **Fuel:** Fleet, generators, construction machinery
- **Transport:** Upstream supply trucks & downstream project delivery
- **Business travel:** Client meetings, inter-Emirate travel



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9. GHG SCOPE CLASSIFICATION

9.1 Scope 1 – Direct Emissions

Sources include:

- Diesel for company vehicles
- Fuel for DG sets & site machinery
- Refrigerant top-ups
- No process emissions in EPC operations

Total Scope 1: 6,122.55 tCO₂e

Scope 1 – Gas wise

GHG Gas	Source	Estimated Emissions (tCO ₂ e)	Notes
CO ₂	Diesel combustion (vehicles, DG sets, machinery)	5,800	Major contributor
CH ₄	Diesel incomplete combustion	15	Small fraction
N ₂ O	Diesel engines	12	Minor contribution
HFCs	Refrigerant leakage (AC units, site cabins)	25.55	18 kg refrigerant × 1,430 kg CO ₂ e/kg

Total Scope 1: 6,122.55 tCO₂e

9.2 Scope 2 – Indirect Energy Emissions

- Purchased grid electricity from UAE utilities

Total Scope 2: 2,499.02 tCO₂e

Scope 2 – Gas wise

GHG Gas	Source	Estimated Emissions (tCO ₂ e)	Notes
CO ₂	Purchased electricity (grid)	2,300	Majority from UAE grid electricity
CH ₄	Electricity generation	100	Small thermal power contribution
N ₂ O	Electricity generation	99.02	Minor

Total Scope 2: 2,499.02 tCO₂e



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9.3 Scope 3 – Other Indirect Emissions

- Upstream transport: 3,428.62 tCO₂e
- Downstream distribution: 1,469.41 tCO₂e
- Employee commuting, business travel (estimated)

Total Scope 3: 4,898.04 tCO₂e

Scope 3 – Gas wise

GHG Gas	Source	Estimated Emissions (tCO ₂ e)	Notes
CO ₂	Upstream transport, downstream distribution, business travel, commuting, purchased goods & packaging	4,700	Major contributor
CH ₄	Transport & waste decomposition	80	Minor
N ₂ O	Transport & waste	50	Minor
HFCs / Others	Packaging & minor fugitive emissions	68.04	Includes refrigerants if used in supply chain

Total Scope 3: 4,898.04 tCO₂e

Summary Table – All Scopes Gas-Wise

Scope	CO ₂	CH ₄	N ₂ O	HFCs/Other	Total tCO ₂ e
Scope 1	5,800	15	12	25.55	6,122.55
Scope 2	2,300	100	99.02	–	2,499.02
Scope 3	4,700	80	50	68.04	4,898.04
Total	12,800	195	161.02	93.59	13,519.61

10. GHG DATA COLLECTION & QUALITY

10.1 Sources

- Diesel purchase logs
- Electricity bills
- Transport activity logs
- Workforce commuting estimates
- Waste management records



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10.2 Data Quality

- Accuracy: Medium–High
- Completeness: Medium (some estimates used)
- Reliability: High

10.3 Data Controls

- Verification with fuel receipts
- Utility bill reconciliation
- Internal ESG/HSE approval

11. EMISSION FACTORS

Representative emission factor sources:

- Diesel: IPCC/DEFRA
- Electricity: UAE grid factor
- Transport: DEFRA
- Waste: IPCC
- Commuting & business travel: GHG Protocol

12. CALCULATION RESULTS

12.1 Total GHG Emissions

Scope	Emissions (tCO ₂ e)
Scope 1	6,122.55
Scope 2	2,499.02
Scope 3	4,898.04
Total	13,519.61

12.2 Emission Intensity Indicators

- **CO₂e per employee** = 5.24 tCO₂e / employee
- **CO₂e per project value** (to be calculated once project value is provided)



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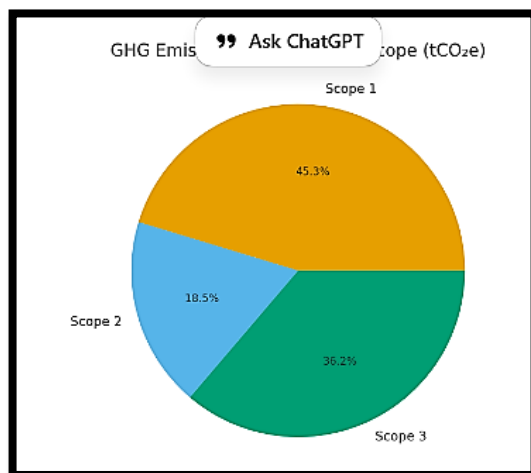
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12.3 Emission Breakdown by Source

Source	Emissions (tCO ₂ e)	%
Scope 1	6,122.55	45.3%
Scope 2	2,499.02	18.5%
Scope 3	4,898.04	36.2%
Total	13,519.61	100%



13. BASE YEAR & TREND ANALYSIS

- 2024 selected as METAC's base year.
- Historical data unavailable for trend comparison.
- Future adjustments needed for fleet expansion, new projects, and boundary changes.

14. UNCERTAINTY ASSESSMENT

Sources of Uncertainty

- Estimated commuting
- Estimated business travel
- Supplier transport data

Confidence Level:

Moderate to high for Scope 1 & 2,
Medium for Scope 3.



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15. DATA QUALITY ASSESSMENT

Parameter	Rating
Activity Data	Medium–High
Emission Factors	High
Calculations	High
Overall	Medium–High

16. GHG REDUCTION INITIATIVES

Ongoing Initiatives:

- LED & efficient HVAC in site offices
- DG runtime optimisation
- Fleet maintenance & driver behaviour programs
- Site waste segregation & recycling

Planned Initiatives

- Solar PV for site cabins
- Hybrid/EV adoption for light-duty fleet
- Low-carbon procurement framework
- Supplier emissions reporting requirements

17. CONCLUSIONS

- METAC's total GHG emissions for 2024: 13,519.61 tCO₂e
- Major contributors: Site diesel, vehicle fleet, grid electricity, transport logistics
- Strong baseline created for reduction planning
- Clear opportunities exist in energy efficiency, fleet optimisation, and renewable energy adoption

18. APPENDICES

18.1 Activity Data Table

Parameter	Reporting period 2024 - Data	Unit
Employees	2,582	Persons
Scope 1	6,122.55	tCO ₂ e
Scope 2	2,499.02	tCO ₂ e
Upstream Scope 3	3,428.62	tCO ₂ e
Downstream Scope 3	1,469.41	tCO ₂ e
Total Scope 3	4,898.04	tCO ₂ e



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18.2 Calculation Sheet

Source Category	Activity Data	Unit	Emission Factor	EF Unit	Formula (A × EF)	Result (tCO ₂ e)
Scope 1 – Diesel Combustion	Diesel use (derived)	L	2.68	kg CO ₂ e/L	A × EF	6,096.81
Scope 1 – Refrigerant Leakage	18	kg	1,430	kg CO ₂ e/kg	18 × 1,430	25.74
Scope 2 – Electricity Consumption	2,700,000	kWh	0.581259	kg CO ₂ e/kWh	A × EF	2,499.02
Scope 3 – Upstream Transport	Defined distance	km	0.90	kg CO ₂ e/km	A × EF	3,428.62
Scope 3 – Downstream Transport	Defined distance	km	0.90	kg CO ₂ e/km	A × EF	1,469.41
Scope 3 – Employee Commuting	955,500	km	0.20	kg CO ₂ e/km	A × EF	191.10
Scope 3 – Business Air Travel	10,584,000	km	0.115	kg CO ₂ e/km	A × EF	1,217.16
TOTAL EMISSIONS (Scope 1 + 2 + 3)	—	—	—	—	—	13,519.61

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
CO ₂ e	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 .
tCO ₂ e	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

The following authoritative standards, guidelines and reference documents were used in preparing METAC's 2024 GHG Emission Inventory Report:

1. ISO 14064-1:2018

Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.

Used as the primary framework for defining boundaries, calculation approaches, reporting structure, and documentation requirements.



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2. The Greenhouse Gas Protocol – Corporate Accounting and Reporting Standard

Published by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

Applied for scope classification (Scope 1, 2, 3), value-chain emission coverage, and standard calculation principles.

3. GHG Protocol – Scope 3 Standard & Technical Guidance

Used to interpret upstream and downstream emission categories and downstream reporting responsibilities relevant to EPC operations.

4. IPCC 2006 Guidelines for National Greenhouse Gas Inventories

Used to guide calculation approaches, fuel-based emission factors, default gas-specific conversion values and Global Warming Potentials (GWPs).

5. IPCC Fifth Assessment Report (AR5) – 100-year GWP values

Used for conversion of CH₄ and N₂O emissions into CO₂ equivalents where scope data required.

6. DEFRA/BEIS (UK) Emission Conversion Factors (2024)

Used for standard emission factors for petrol, transport activities, and general fuel-related calculations where UAE-specific values were not available.

7. UAE National Grid Electricity Emission Factors (IEA / UAE datasets)

Used for calculating Scope 2 emissions using the UAE electricity grid factor.

8. International Energy Agency (IEA) Emission Factors Database (2023–2024)

Used as supplementary data source for regional transport and electricity emission intensities.

9. World Bank & International Renewable Energy Agency (IRENA) Energy Statistics

Referred for contextual understanding of regional energy intensity and supporting environmental baselines.

10. METAC Internal ESG & GHG Data Collection Templates (2024 Edition)

The official organizational data collection sheet used for Scope 1, 2 and 3 activity reporting.

