MAG
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Carbon Baseline Report 2024

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Written and analysed by: Elliot Ball, Global Climate and Environment Advisor

Project managed by: Jack Gould, Strategic Project Manager

With thanks to colleagues across MAG's global programmes and headquarters whose data, expertise, and collaboration made this inventory possible.

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Executive Summary

In 2024 the Mines Advisory Group (MAG) completed its first organization-wide greenhouse gas (GHG) inventory. The exercise established a baseline across 41 operational entities and estimated total emissions at 22,313.20 tCO_2e.

These emissions are broken down as follows:

Scope	Description	Emissions (tCO2e)	Share of total
Scope 1	Direct fuel use (vehicles, generators)	7,341.60	32.90%
Scope 2	Purchased electricity	1,063.74	4.77%
Scope 3	Value-chain emissions	13,907.86	62.33%

The inventory provides a transparent foundation for emissions reduction planning in line with the Greenhouse Gas Protocol. MAG applied an operational control boundary and used a hybrid methodology: measured activity data were collected wherever possible and spend-based estimates were used when detailed activity level records were unavailable.

The result of the carbon inventory exercise show that emissions are highly concentrated in three business areas:

- Fuel consumption for vehicles and generators (Scope 1).
- Procurement of goods and services (Scope 3, Category 3.1).
- International travel (Scope 3, Category 3.6).

These three sources account for more than 80 % of MAG's footprint and therefore offer the greatest opportunities for targeted mitigation. MAG also reported emissions associated with cash transfers and in-kind support to delivery partners as a bespoke Scope 3 category to improve accountability for downstream impacts.

As with any first-cycle humanitarian inventory, data gaps were met. Emissions from refrigerants, waste, and employee commuting were not fully captured; however these omissions are clearly documented below. Going forward MAG plans to expand activity-based reporting, improve supplier engagement and data coverage, and refine its emission estimates. This baseline positions the organization to track progress towards its climate commitments—a 45 % reduction in emissions by 2030 and net-zero by 2050.

Purpose and context

2.1 Rationale for Measuring Emissions

MAG's operations across Humanitarian Mine Action (HMA) and Weapons and Ammunition Management (WAM) are inherently energy and resource intensive. Large vehicle fleets, fuel-powered equipment, extensive logistics, and international travel all generate greenhouse gas (GHG) emissions that contribute to MAG's overall environmental footprint.

As climate-related risks escalate globally, MAG recognises that responsible humanitarian action must include understanding and managing its own emissions. Quantifying these emissions enables MAG to identify its most significant impact areas, align with growing donor and regulatory requirements, and strengthen the environmental sustainability of its work.

This carbon inventory establishes MAG's first comprehensive organisational baseline, providing a consistent and verifiable foundation for monitoring, managing, and reducing emissions over time.

2.2 Strategic and Organisational Alignment

This carbon inventory operationalises MAG's Strategic Framework (2024–2028) commitment to "understand and account" for the impact climate change as a systemic threat to human security and humanitarian effectiveness. Within this framework, MAG has pledged to:

- Reduce organisational greenhouse gas (GHG) emissions by 45% by 2030, and
- Achieve net-zero emissions by 2050.

By quantifying its emissions, MAG strengthens the evidence base needed to deliver on these strategic goals and to embed climate responsibility across all programmes and support functions.

The inventory also demonstrates progress against Commitment 2 of the Climate and Environment Charter for Humanitarian Organisations — "Measure and significantly reduce our greenhouse gas emissions" — and reflects alignment with emerging international best practice, including the Science Based Targets initiative (SBTi) and broader expectations for environmental accountability within the humanitarian sector.

2.3 Purpose and Goal of the Inventory

This report presents MAG's first organisation-wide GHG inventory, developed to provide a technically robust, transparent emissions baseline. It enables:

- Quantification of 2024 emissions across Scope 1, Scope 2, and selected Scope 3 categories
- Identification of major emissions sources to inform emission reduction and mitigation priorities
- Documentation of data limitations and system improvement needs
- Application of a consistent, repeatable methodology aligned with international standards

The inventory builds on previous limited reporting under the UK's Streamlined Energy and Carbon Reporting (SECR) framework and now includes all operational entities across MAG's global portfolio of operations.

2.4 Intended Audience

This inventory is designed as MAG's authoritative technical reference on organisational emissions. It is intended for:

- MAG leadership and programme teams – to inform emissions reduction planning, operational strategy, and integration of carbon considerations into programme delivery.
- Institutional donors and partners – to demonstrate MAG's alignment with global climate standards and sectoral best practice.
- External reviewers and assurance bodies – to support verification, audit-readiness, and alignment with frameworks such as the GHG Protocol and SBTi.

Summary versions and communications materials will be developed for other audiences, but this report remains the primary reference for all data, methods, assumptions, and emissions totals.

Methodology and standards

3.1 Methodological Framework and Organisational Boundary

MAG prepared its inventory following the Greenhouse Gas Protocol Corporate Standard, using the Humanitarian Carbon Calculator (HCC) to estimate emissions across Scope 1, Scope 2 and selected Scope 3 categories. An operational control approach defines the boundary: emissions are included where MAG has full authority over implementation decisions, including staffing, procurement, asset use and service delivery. This boundary covers all MAG-managed country programs, headquarters functions and coordination hubs.

Emissions from subcontracted partners or delivery agencies—where MAG does not keep daily operational control—are excluded from Scopes 1 and 2 and captured under Scope 3 (Category 3.1) in line with GHG Protocol guidance.

This approach reflects MAG's decentralized delivery model and its evolving role as a sub-contractor and partner organisation in certain operational environments.

3.2 Data Sources and Emission Factors

MAG employed a hybrid data approach, combining activity-based and spend-based methods depending on data availability and reliability:

Activity-based data were prioritized for fuel consumption, electricity use, travel and capital goods. Examples include site-level fuel and electricity logs, actual flight itineraries and itemized procurement data for vehicles, generators, ICT and other high-emission assets.

Spend-based data were used where direct activity data were unavailable, particularly for general procurement and services.

For these estimates MAG replaced the HCC's default Euro-denominated factors with DEFRA 2021 emission factors in GBP to align with UK reporting conventions.

All emission factors are documented and traceable (see Annex 1). Sources include DEFRA (2021) for spend-based estimates and HCC default factors for activity-based categories (derived from ADEME, BEIS, ICAO and other authoritative sources).

3.3 Greenhouse Gases Covered

The inventory accounts for all greenhouse gases covered by the Kyoto Protocol, reported as tonnes of carbon dioxide equivalent (tCO_2e) using 100-year Global Warming Potentials from the Intergovernmental Panel on Climate Change. In practice MAG's emissions are dominated by carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) arising from fuel combustion, electricity uses and travel. Fugitive emissions from refrigerants (HFCs) were not captured due to lack of data and are therefore excluded from the baseline.

3.4 Calculation Tools and Approach

MAG used the Humanitarian Carbon Calculator (HCC) as the core tool for emissions quantification. The HCC is a sector-specific, Excel-based calculator developed under the Climate and Environment Charter, supporting both activity-based and spend-based methodologies across a broad range of humanitarian functions.

To align with MAG's financial systems and reporting obligations, the HCC was adapted to:

- Replace default Euro-denominated spend-based factors with DEFRA 2021 values in GBP
- Integrate MAG-specific data collection templates for consistent input from field entities
- Include quality flags to distinguish between measured, estimated, and spend-based data

Emissions were calculated at entity level and aggregated centrally using the HCC's built-in modules. MAG applied the following hierarchy:

1. Measured activity data – e.g. litres of fuel, kWh of electricity, flight itineraries

2. Estimated activity data – using structured templates and standard assumptions

3. Spend-based estimates – where direct data was not available, applying DEFRA factors to financial records

All calculations are fully documented and traceable. Emission factor sources and data assumptions are listed in Annex 1.

3.5 Limitations and Data Exclusions

This inventory provides comprehensive coverage of MAG's organisational greenhouse gas (GHG) footprint across Scope 1, Scope 2, and selected Scope 3 emission categories. As MAG's first full-cycle inventory, conducted across a wide range of humanitarian contexts, several methodological limitations apply.

Fugitive emissions from refrigerants were excluded due to the absence of standardised tracking systems and refrigerant-specific data. Process emissions generated through explosive ordnance disposal and destruction were also excluded, as MAG currently lacks the technical capacity to calculate these with sufficient accuracy.

Waste-related emissions were only partially reported, with submissions often incomplete or expressed in non-standard units. Employee commuting data were piloted in four country programmes but excluded from the final totals owing to low response rates and poor data accuracy.

Within capital goods, only high-emission categories such as vehicles, ICT equipment, and generators were captured at the activity level; other assets were included through spend-based estimates. Upstream transportation emissions were incorporated only where suppliers reported data directly, as underlying activity data could not be independently verified.

Biogenic CO_2 and land-use change (LULUCF) emissions were not relevant to MAG's current operations and have therefore been excluded.

Standardised emission factors were applied across all programmes to ensure methodological consistency, even though local variations—such as grid emission intensities or fuel compositions—may not be fully represented.

All omissions have been transparently documented, and conservative assumptions applied where necessary to maintain data integrity.

3.6 Forward Look

The 2024 carbon inventory represents a foundational step in establishing MAG's organisational capability to measure, manage, and reduce its greenhouse gas emissions. This baseline provides a platform from which MAG can improve the completeness, accuracy, and integration of carbon data across operational systems in future reporting cycles.

Future improvements will focus on:

- Expanding activity-based data collection, especially in Scope 3 categories such as waste, and general procurement
- Standardising units and reporting protocols for fugitive gases and process emissions
- Embedding emissions data into programme design, procurement, and MEAL systems
- Enhancing emission factor precision, including sourcing regional or supplier-specific data where available
- Developing materiality criteria to guide the inclusion of additional sources over time
- MAG's ambition is to move from standalone biennial reporting toward real-time operational use of emissions data. This approach will strengthen climate accountability and support emissions reductions that are operationally feasible, evidence-based, and aligned with MAG's humanitarian mission.

2024 Emissions Summary

This section presents a consolidated overview of MAG's greenhouse gas emissions for the 2024 reporting year, based on available activity data and spend-based estimates across Scope 1, Scope 2, and selected Scope 3 categories.

Emissions have been calculated using the GHG Protocol Corporate Standard and the Humanitarian Carbon Calculator, applying the hybrid methodology described in Section 3.

4.1 Total Emissions Overview

In 2024, MAG's total organisational emissions across all scopes were estimated at 22,313.20 tonnes of carbon dioxide equivalent (tCO_2e). These emissions are distributed across the Greenhouse Gas Protocol categories as follows:

Scope	Description	Emissions (tCO2e)	Share of total
Scope 1	Direct fuel use (vehicles, generators)	7,341.60	32.9%
Scope 2	Purchased electricity	1,063.74	4.8%
Scope 3	Value-chain emissions	13,906.95	62.3%

Scope 3 emissions represent the majority of MAG's footprint, consistent with trends across the humanitarian sector, where procurement and travel activities contribute significantly to total emissions.

4.2 Emissions by Scope & Category

To support analysis and inform mitigation priorities, emissions were disaggregated by source and category. Key findings include:

Scope 1 Emissions - 7,341.60 tCO_2e

Mobile combustion — including vehicles, motorbikes, trucks, and excavation equipment — accounted for the largest share of MAG's emissions, producing approximately 5,512 tCO_2e. Where fuel consumption data were not disaggregated between mobile and stationary sources, emissions were consistently categorised under mobile combustion to maintain consistency across programmes.

Stationary combustion, primarily from diesel generators and other fixed fuel-consuming assets, contributed an additional 1,824 tCO_2e.

Emissions from refrigerant leaks were not systematically reported across programmes. A partial submission from Iraq accounted for 5.64 tCO_2e, but fugitive gases remain largely excluded from this inventory and have been identified as a priority area for future reporting improvements.

Scope 2 Emissions – 1,063.74 tCO_2e

Electricity-related emissions reflect grid consumption across offices and field bases. Some entities supplied metered data; others reported costs, which were converted into kilowatt-hour estimates using average regional rates. Variation in local grid emission factors means electricity emissions are unevenly distributed but remain significant in grid-dependent locations.

Scope 3 Emissions - 13,906.95 tCO_2e

Scope 3 emissions account for 62.3 % of the total underscoring the importance of engaging suppliers, improving procurement data and assessing travel policies as part of MAG's emissions reduction strategy Major contributors include:

Category	Description	(tCO2e)	Notes
3.1 Purchase goods and services	Program inputs and external services	5,578.72	Wide range of procurement across global operations
3.2 Capital goods	Vehicles, ICT equipment, generators and other assets	2,810.55	High-emission items tracked at item level
3.3 Fuel and energy related activities	Upstream extraction, refining and transport of fuels used by MAG	2,259.05	Reflects emissions beyond direct combustion
3.4 Upstream transport	Supplier transport to MAG	78.42	Based on supplier-reported figures; underlying data not verified
3.5 Waste generated in operations	Waste disposal and treatment	179.27	Limited and inconsistent reporting
3.6 Business and volunteer travel	International flights and accommodation	3,001.85	Highlights the emissions intensity of international coordination
Custom category – cash transfers and in-kind support	Financial transfers and delegated delivery through partners	1,206.33	Captures emissions associated with MAG's role as funder

4.3 Key Insights

MAG's first global carbon inventory reveals a highly concentrated emissions profile. Three operational areas—fuel use, procurement, and international travel—together account for more than 80% of total organisational emissions. This concentration is both a challenge and an opportunity: it confirms that significant impact can be achieved by focusing on a small number of core activities that are central to MAG's humanitarian delivery model.

Fuel use under Scope 1, particularly for vehicle fleets and generators, emerges as the largest controllable source of direct emissions. These assets are essential for programme delivery in remote, conflict-affected, or infrastructure-poor environments, but they also represent a critical area where operational efficiency and emissions reduction efforts can yield immediate results.

The current data reflects a conservative treatment of fuel reporting, with some disaggregation limitations between mobile and stationary sources.

Nonetheless, total emissions are accurately captured and serve as a robust benchmark for future improvement.

Procurement-related emissions, captured under Scope 3, are equally significant. Purchased goods and services, along with capital goods, account for a large proportion of MAG's footprint.

These emissions are inherently harder to influence directly, as they are embedded in supply chains and upstream production systems. However, they are not beyond MAG's reach: procurement policies, supplier engagement, and specification design offer levers for reducing emissions intensity over time.

International travel, while integral to technical support, donor engagement, and coordination, is the third major hotspot.

Its prominence in the inventory reinforces the importance of reviewing travel policies, exploring alternatives to frequent flights, and improving how trips are planned and justified.

One important feature of MAG's baseline is the inclusion of downstream emissions from financial transfers and in-kind support to partners. This reflects a growing shift in MAG's operating model and ensures that emissions linked to funding others are not overlooked.

While not yet standard practice across the sector, this approach improves accountability and expands the relevance of the inventory beyond MAG's immediate physical operations.

In sum, the 2024 inventory establishes not just the total scale of MAG's emissions, but where—and how—those emissions arise. The insights it provides are highly actionable, offering a clear evidence base for designing targeted, cost-effective, and operationally realistic mitigation strategies.

Emissions intensity metrics

While absolute emissions totals provide the most direct measure of MAG's climate impact, intensity metrics offer essential additional insight. They allow emissions to be understood in relation to operational scale, financial resources, and programmatic output. These ratios are especially valuable for assessing year-on-year changes in emissions performance—independent of growth in staffing or budgets—and for aligning MAG's reporting with globally comparable inter-agency comparison purposes and international frameworks (such as SBTi).

5.1 Emissions per Full-Time Equivalent (FTE)

MAG's total emissions in 2024 were distributed across an average workforce of 5,797 full-time equivalent (FTE) employees, calculated based on headcounts at the beginning and end of the reporting year. This results in an intensity ratio of 4.07 tCO_2e per FTE. This figure provides a benchmark for organisational efficiency and emissions accountability per staff member and will serve as a key metric for evaluating trends as staffing levels fluctuate over time.

5.2 Emissions per £1 Million Organisational Spend

In 2024, MAG's total organisational expenditure was £98,565,440, leading to an emissions intensity of 226.38 tCO_2e per £1 million spent. This metric reflects the embedded emissions associated with MAG's programme delivery model and procurement footprint.

It offers a complementary perspective to the FTE ratio, helping to track the emissions efficiency of spending decisions and assess opportunities for lower-carbon procurement or delivery approaches.

5.3 Emissions per Unit of Output (Pilot)

As part of the 2024 baseline process, MAG piloted output-based emissions intensity metrics in Vietnam to explore the relationship between greenhouse gas emissions and humanitarian outcomes. The objective was to test the feasibility of linking emissions performance to core operational outputs—supporting more informed decision-making in future programming.

Using MAG Vietnam's verified 2024 emissions and output data, two pilot indicators were calculated:

- 32.66 tCO_2e per km^2 of land released, based on 1,259.72 tCO_2e in emissions and 38.57 km^2 of land released.
- 0.118 tCO_2e per explosive ordnance (EO) item found and destroyed, based on the same emissions total and 10,670 EO items cleared.

These figures include Scope 1, Scope 2, and selected Scope 3 emissions reported at country level. While these metrics are not yet designed for cross-country comparison, they provide a strong foundation for future benchmarking and integration of emissions considerations into programme planning. MAG will continue exploring how to scale this approach to other operational contexts in future reporting cycles.

Regional analysis

MAG's 2024 carbon inventory is structured around seven Super Reporting Entities (SREs), each comprising multiple country programmes and relevant support functions. This structure reflects MAG's existing management and financial reporting frameworks, enabling operational emissions to be meaningfully analysed by region.

Emissions are allocated to the entity responsible for the underlying activity wherever possible.

However, due to structural changes and evolving internal reporting systems during 2024, some activity- and spend-based data may span multiple entity titles. While such allocations have been carefully managed, they may result in minor inconsistencies in subtotal calculations at the entity level, specifically in relation to where spend based expenses have been allocated in the financial accounts. Global totals remain unaffected.

6.1 Regional Emissions Breakdown

The table below summarises emissions by SRE and scope:

	Scope 1	Scope 2	Scope 3	Total	% Total
Coordination Offices	0.00	23.11	961.89	985.00	**4.41%**
Asia Pacific	3035.80	325.56	3867.50	7228.86	**32.40%**
Eastern Europe	346.40	105.38	2387.50	2839.28	**12.73%**
East & Southern Africa	890.90	8.80	1919.42	2819.12	**12.63%**
Middle East	2652.97	481.78	2428.82	5563.58	**24.94%**
Latin America	39.10	17.99	1051.95	1109.04	**4.97%**
West Africa	376.43	101.11	1289.86	1767.41	**7.92%**
Global	**7341.60**	**1063.74**	**13906.95**	**22312.29**	**100%**

The Asia Pacific region contributed the largest share of emissions, accounting for 32.4% of the organisational total. This reflects the region's large-scale operational footprint and significant reliance on fuel and procured services. The high Scope 1 figure indicates extensive use of MAG-owned vehicles and equipment, often in remote environments with limited infrastructure.

The Middle East region follows at 24.9%, with notable contributions from both Scope 1 and Scope 3. Fuel use is substantial due to ongoing clearance activities in Iraq and Syria, and emissions from procurement and partner support are also high, reflecting MAG's role as both implementer and funder.

Eastern Europe and East & Southern Africa contribute similar totals (~12.6–12.7%). In Eastern Europe, emissions are primarily driven by procurement and travel-related Scope 3 activities. Scope 1 emissions are comparatively modest, indicating lower reliance on diesel fleets or generator-based infrastructure.

East & Southern Africa presents a mixed profile. While absolute emissions are lower than in Asia or the Middle East, the region reports one of the highest emissions intensities per FTE, driven by high field-based activity with comparatively fewer staff. Fuel use for vehicles and generators constitutes most Scope 1 emissions. The Scope 3 profile is shaped by procurement and capital goods linked to programme delivery, including demining equipment and ICT. Electricity use is low (8.80 tCO_2e), reflecting minimal reliance on public grids or limited metering in several country offices. As data systems improve, additional emissions—particularly from upstream procurement—may become more visible in future cycles.

The Coordination Offices, which include MAG's headquarters and non-operational support functions, contributed 4.4% of the total footprint. Nearly all these emissions fall under Scope 3, largely driven by procurement and travel.

Latin America and West Africa report smaller footprints (5.0% and 7.9%, respectively), consistent with the scale and nature of MAG's operations in these regions. Emissions are largely concentrated in procurement and travel, with relatively low contributions from direct fuel use or electricity.

Emission hotspots and drivers

The 2024 carbon inventory reveals a high concentration of emissions in a small number of operational and supply chain activities. This pattern is typical of humanitarian organisations operating in complex environments and provides a clear focus for future emissions management efforts.

7.1 Where emissions are most concentrated?

MAG's emissions are dominated by three major categories:

1.Fuel consumption (Scope 1), particularly diesel used in vehicles, generators, and heavy machinery, accounts for more than 7,300 tCO_2e. Mobile fuel use alone is the single largest individual category, underscoring MAG's reliance on fleet-based mobility and off-grid energy systems.

2. Procurement of goods and services (Scope 3, Category 3.1), which includes operational supplies, services, and local subcontracts, is responsible for over 5,500 tCO_2e. These emissions are embedded in upstream value chains and reflect the material intensity of MAG's delivery model.

3. Business and volunteer travel (Scope 3, Category 3.6) generated approximately 3,000 tCO_2e, driven by international flights for technical support, training, donor relations, and field visits.

Together, these sources account for more than 80% of MAG's total footprint.

7.2 Why these hotspots matter

Each hotspot presents a different profile in terms of operational influence and mitigation potential.

Fuel use sits within MAG's direct control, making it one of the most immediately actionable areas. Emissions from fleet and generator operations can be addressed through improved maintenance, load monitoring, route planning, and gradual asset replacement.

In contrast, emissions from procurement and supply chains require more systemic interventions. These include embedding environmental criteria into tendering processes, engaging suppliers on emissions transparency, and shifting purchasing decisions toward lower-carbon alternatives. While these changes are less immediately visible, they are critical for long-term impact.

Travel emissions offer a mixed picture. While some international movement is necessary for programme support and quality assurance, there is scope for reducing the frequency and footprint of travel through better planning, consolidation of itineraries, and increased use of remote engagement where appropriate.

MAG's inclusion of downstream emissions from partner transfers further strengthens its accountability. These emissions, while not always within MAG's operational control, are materially linked to its funding and programming decisions and should be tracked alongside internal activity going forward.

7.3 Implications for future management

This concentration of emissions simplifies the challenge of carbon management: a relatively small number of intervention areas can yield significant impact. Fuel use, travel, and procurement will form the core focus of MAG's near-term emissions reduction strategy. These are also the areas where improvements in data quality and operational systems are most urgently needed.

The inventory results have already influenced MAG's internal planning. Initiatives are underway to trial fuel tracking tools, revise travel approval protocols, and develop procurement guidance that integrates climate considerations.

These pilots will inform broader policy shifts and system changes in future years.

Over time, addressing these hotspots will enable MAG to reduce emissions without compromising humanitarian outcomes. By focusing first on the sources, it can influence most and building mechanisms to understand and shape value chain impacts, MAG is well positioned to make practical, data-driven progress toward its climate targets.

Proposed emission reduction

MAG's 2024 carbon inventory has revealed a concentrated emissions profile: most emissions arise from a small number of high-impact sources, including diesel fuel use, international travel, and procurement of goods and services. This concentration enables MAG to pursue an emissions reduction strategy that is focused, measurable, and consistent with the operational realities of humanitarian action.

Drawing on the options appraisal conducted in mid-2025, MAG's will develop an emission reduction strategy that targets the most material sources of emissions, balancing ambition with feasibility.

The approach is anchored in MAG's 2024–2028 Climate and Environment Strategy and structured around a combination of direct emissions controls, enabling systems, and staff-led behaviour change.

In order to understand the feasibility of delivering a package of emission reduction measures, MAG intends to conduct a global Emission Reduction Feasibility Assessment in Q4 2025 and Q1 2026. This is to ensure that decisions made are context appropriate, within MAGs operational control and quantifiable. The proposed emission reduction approaches below are indicative at the time of writing, representing top level approaches for further exploration.

8.1 Priority Interventions by Emissions Source

Fuel use (Scope 1 – 7,341.60 tCO_2e in 2024)

To address emissions from vehicles and generators, MAG will investigate the feasibility of:

- Transitioning to renewable energy systems, especially in generator-reliant field locations with strong solar potential.

A "renewable-first" procurement policy could be considered, alongside HQ financial mechanisms to support upfront capital investment. Phasing out diesel generators could yield up to a 6% reduction in MAG's total emissions over five years.

- Adopting a revised fleet management toolkit, including standardised fuel tracking, maintenance records, and driver training. This system will enable data-driven fleet optimisation and future shifts to hybrid or electric vehicles. Although emissions reductions are indirect, this initiative is foundational to long-term decarbonisation.

Electricity Consumption (Scope 2 – 1,064 tCO_2e)

MAG will assess implementing energy efficiency "quick wins" across all facilities—such as LED lighting, AC timers, and programmable devices—during routine site reviews. Offices will also be required to switch to green energy tariffs where available and financially feasible, supporting an immediate, low-cost reduction in electricity emissions.

Travel (Scope 3.6 – 3,002 tCO_2e)

MAG will explore a structured approach to reduce international air travel emissions, considering options including:

- A fixed carbon budget for business travel tied to organisational spend, with a proposed annual reduction ratchet of 5–10%.
- A "virtual-first" travel policy, requiring justification for in-person engagement.
- Carbon-weighted travel procurement, so that emissions are factored into flight selection even where costs are marginally higher.

Combined, these measures are expected to deliver progressive reductions in Scope 3 travel emissions, supporting predictable and measurable climate impact.

Procurement and supply chains (Scope 3.1, 3.2, 3.3 – ~8,000 tCO_2e)

MAG will investigate pilot initiatives to improve understanding and influence of its Scope 3 supply chain emissions by:

- Engaging priority suppliers to obtain Environmental Product Declarations (EPDs) and Life Cycle Assessments (LCAs) for key items.
- Embedding climate criteria in procurement processes, evaluating supplier capacity to deliver lower-emission alternatives.

Although harder to quantify in the short term, these initiatives lay the groundwork for future systemic reductions across MAG's highest-emitting category.

8.2 Behaviour Change and Culture

MAG recognises that long-term emissions reductions will require not only technical interventions but also a shift in organisational culture.

To support this, a global 'Reduce Together' staff engagement campaign will be launched. The campaign will encourage practical changes in daily energy use, transport, and procurement habits, building a shared sense of ownership over MAG's climate commitments.

8.3 Monitoring and Evaluation

From 2026 onwards, MAG will maintain a biennial comprehensive carbon inventory, with annual tracking of Scope 1, Scope 2, and Scope 3.6 emissions. Key performance indicators will be linked to emissions intensity per FTE and per £1 million spent, alongside emerging output-based metrics.

This approach ensures that progress is monitored, lessons are incorporated into programme design, and emissions reductions are aligned with MAG's humanitarian mandate.

Data quality and assurance

9.1 Overview

MAG recognises that data quality, transparency, and methodological consistency are essential prerequisites for credible carbon accounting and future third-party assurance. As this is MAG's first organisation-wide emissions inventory, it has been approached as a foundational exercise—designed to build a technically robust, repeatable baseline while acknowledging current system constraints and capacity gaps.

This section outlines the quality management approach applied throughout the 2024 inventory process. It presents key methodological assumptions, assesses data completeness and consistency, and highlights both strengths and areas for improvement. The intention is to provide transparency to both internal and external audiences, including potential assurance providers.

While all carbon inventories involve some degree of uncertainty—particularly in humanitarian contexts—MAG has prioritised materiality, traceability, and methodological integrity. Rather than aiming for full source coverage in the first cycle, the focus has been on capturing the most material and manageable categories, using a tiered approach aligned with the Humanitarian Carbon Calculator (HCC).

The carbon baseline was delivered through a structure project management approach, with a defined Terms of Reference, pre-agreed data collection templates, internal briefings, and spot checks on data submissions. Activity- and spend-based data were reviewed for consistency before aggregation, and all entity submissions are archived in Sharepoint for future verification.

9.2 Data Quality Assessment

MAG's inventory uses a hybrid method combining activity-based and spend-based estimates, consistent with the HCC's methodology. This qualitative assessment covers input data reliability, methodological uncertainty, and attribution to MAG's operational control.

Category	Confidence Level	Notes
Scope 1 (Fuel Use)	Medium-High	Based on litres from logs, receipts; some estimation required in small offices.
Scope 2 (Electricity)	Medium	Mix of metered data and cost-based estimates. Assumptions applied consistently
Scope 3.6 (Business Travel)	High	Standardised data from travel booking systems.
Scope 3.2 (Capital Goods)	Medium	Itemised procurement data: standard embodied carbon factors used.
Scope 3.1 (General Procurement)	Low-Medium	Spend-based; uncertainty due to supplier and sector variability.
Scope 3.5 (Waste)	Low	Data not systematically collected; limited ad hoc, entries
Scope 3.7 (Commuting)	Low	Pilot data excluded from results.
Scope 3.4 (Upstream Transport)	Medium	Supplier-reported tCO2e; limited transparency on methods.

This profile reflects the strengths and constraints of a first-cycle global inventory. -based estimation was used consistently where physical data was unavailable, and uncertainty flags within the HCC tool guided interpretation.

9.3 Key Assumptions and Methodological Choices

MAG's methodology reflects GHG Protocol principles of relevance, completeness, consistency, transparency, and accuracy, and is aligned with the Humanitarian Carbon Calculator. Core choices include:

- Emission Factors: Activity-based emissions use HCC defaults (ADEME, DEFRA, IEA, ICAO). Spend-based entries use DEFRA 2021 GBP emission factors for alignment with MAG financial reporting.
- Organisational Boundary: MAG applied an operational control approach, including all assets and services it manages directly. Implementing partners are included only under Scope 3.
- Capital Goods: Limited to high-impact items (vehicles, ICT, generators), calculated using standard embodied carbon factors.
- Upstream Transport: Included where suppliers reported tCO_2e; underlying shipment data not available.
- Exclusions: Fugitive emissions (e.g. refrigerants), waste, and commuting are excluded or partially reported due to missing physical data. See Section 3.5 for full disclosure.
- GWPs: All emissions expressed in CO_2e using 100-year IPCC values.

9.4 Recalculation Policy

MAG will recalculate historic emissions where changes exceed 5% of total footprint or affect trend comparability. Triggers include:

- Structural changes to MAG's operations or control boundaries.
- New methods, emission factors, or tools.
- Discovery of material errors or improved historical data.
- Revisions to IPCC GWP values.

To date, no recalculations have been made. All future changes will be disclosed in inventory annexes.

9.5 Improvement Plans

MAG is committed to enhancing the accuracy and utility of future inventories. Planned improvements include:

- Full rollout of fuel and electricity tracking systems.
- Expansion of commuting, waste, and refrigerant data collection.
- Introduction of supplier engagement for Scope 3 transparency.
- Increased use of procurement data for high emission categories.
- Development of visual QA dashboards and integration with finance systems.

These efforts will support future inventory assurance and alignment with sectoral climate reporting norms.

9.6 Quality Assurance

MAG is seeking a 3rd Party to provide quality assurance for this carbon inventory. This is planned for Q4 2025.

Concluding remarks

MAG's 2024 carbon inventory represents its first full accounting of greenhouse gas emissions across the organisation. Developed in alignment with the GHG Protocol and drawing on the Humanitarian Carbon Calculator (HCC), the inventory provides a comprehensive baseline of Scope 1, Scope 2, and selected Scope 3 emissions — enabling both internal performance tracking and external accountability.

Moving forward, MAG is will be reviewing the feasibility of taking the following action:

Short Term (2025–2026):

1. Adopt the proposed emissions reduction strategy, with defined targets, budget alignment, and executive accountability.

2. Standardise and expand fuel tracking across all programmes, using a global fleet management system.

3. Improve data systems for Scope 3 procurement, including supplier-level information and more consistent cost coding.

4. Implement staff engagement activities, focused on energy, travel, and procurement behaviours.

Medium-term (2026–2028):

1. Integrate emissions data into programme and procurement design, including TORs, contracts, and MEAL frameworks.

2. Roll out refrigerant, waste and employee commuting tracking protocols, with standard units and reporting templates.

3. Expand output-based emissions metrics, enabling linkage to humanitarian results and outcomes.

In delivering this work, MAG joins a growing number of humanitarian actors taking steps to quantify and reduce their climate impact. The carbon baseline provides not only a technical reference point, but a strategic tool for aligning environmental stewardship with humanitarian effectiveness. The challenge now lies in translating insight into sustained, operationally grounded emissions reduction — while upholding the organisation's core humanitarian mandate.

List of key terms

Activity-Based Data:
Emissions data derived from measured or estimated physical activities, such as litres of fuel consumed, kilometres travelled, or kilowatt-hours of electricity used.

Baseline Year:
The reference year against which future greenhouse gas emissions and reductions are measured. For MAG, 2024 is the baseline year.

Carbon Dioxide Equivalent (CO_2e):
A unit used to express the global warming potential of greenhouse gases in terms of the equivalent amount of carbon dioxide.

Capital Goods:
Durable goods used over time in operations (e.g. vehicles, generators, laptops), with associated embodied emissions from manufacturing and delivery.

Emission Factors (EFs):
Values used to calculate GHG emissions based on a unit of activity (e.g. kg CO_2e per litre of diesel) or spend (£ or €).

Emission Source Category:
A grouping of emissions by similar type or function, such as travel, energy use, procurement, or waste. Used to structure inventories under the GHG Protocol.

Fugitive Emissions:
Unintentional releases of greenhouse gases, typically from refrigeration or air conditioning systems. Not comprehensively reported in MAG's 2024 inventory.

GHG Inventory (Carbon Inventory):
A systematic accounting of all greenhouse gas emissions and removals associated with an organisation's activities during a given reporting period.

GHG Protocol:
The Greenhouse Gas Protocol provides the globally recognised standard for measuring and reporting greenhouse gas emissions across Scopes 1, 2, and 3.

Greenhouse Gases (GHGs):
Gases that contribute to global warming by trapping heat in the atmosphere. Common examples include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

Hybrid Reporting Approach:
A methodology combining activity-based data (where available) with spend-based estimates for categories where direct data is lacking.

List of key terms

Humanitarian Carbon Calculator (HCC):
An emissions calculation tool developed for humanitarian organisations, used by MAG in 2024 to estimate emissions across multiple categories and countries.

Materiality (in emissions accounting):
The threshold at which an emission source is considered significant enough to include in the inventory, based on its potential impact on reported totals or decisions.

Operational Boundary:
Defines which emission sources are included in the inventory, typically based on either operational control (as used by MAG) or financial control.

Operational Control:
An approach to setting boundaries where an organisation includes emissions from operations over which it has full authority to implement policies and practices.

Scope 1 Emissions:
Direct emissions from sources owned or controlled by the organisation (e.g. fuel combustion in MAG vehicles or generators).

Scope 2 Emissions:
Indirect emissions from the consumption of purchased electricity, heating, or cooling.

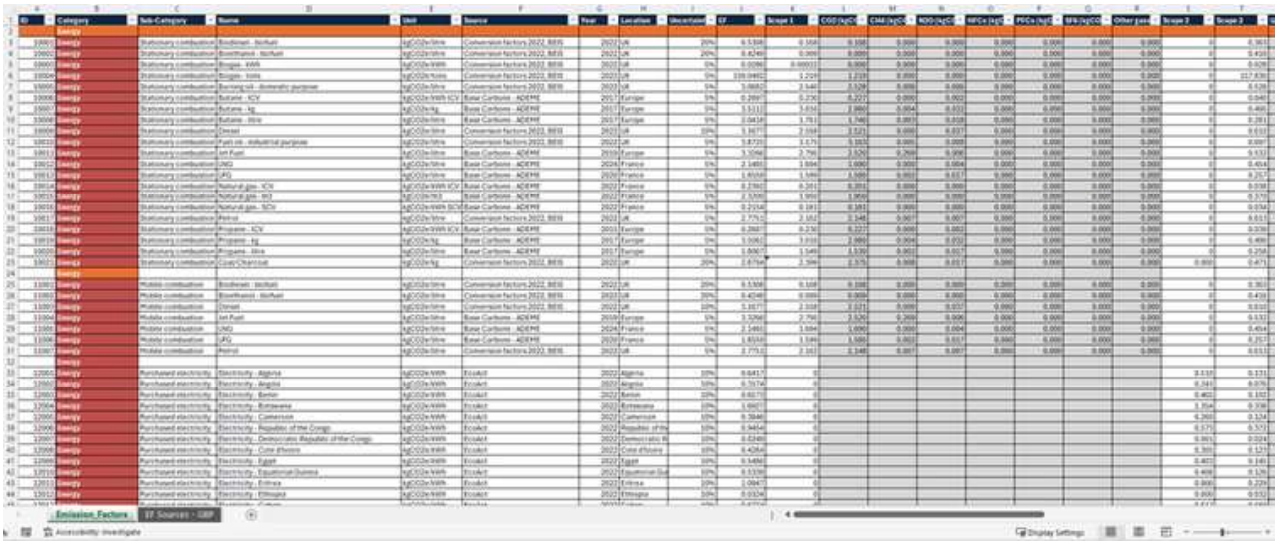
Scope 3 Emissions:
All other indirect emissions occurring in the value chain, including travel, procurement, capital goods, and logistics. Often the largest category for NGOs.

Spend-Based Data:
An estimation method using financial expenditure multiplied by emission factors to calculate GHG emissions (e.g. £ spent on IT × EF for electronics).

tCO_2e (Tonne of Carbon Dioxide Equivalent):
A standard metric for expressing emissions, accounting for different greenhouse gases in terms of their equivalent global warming potential.

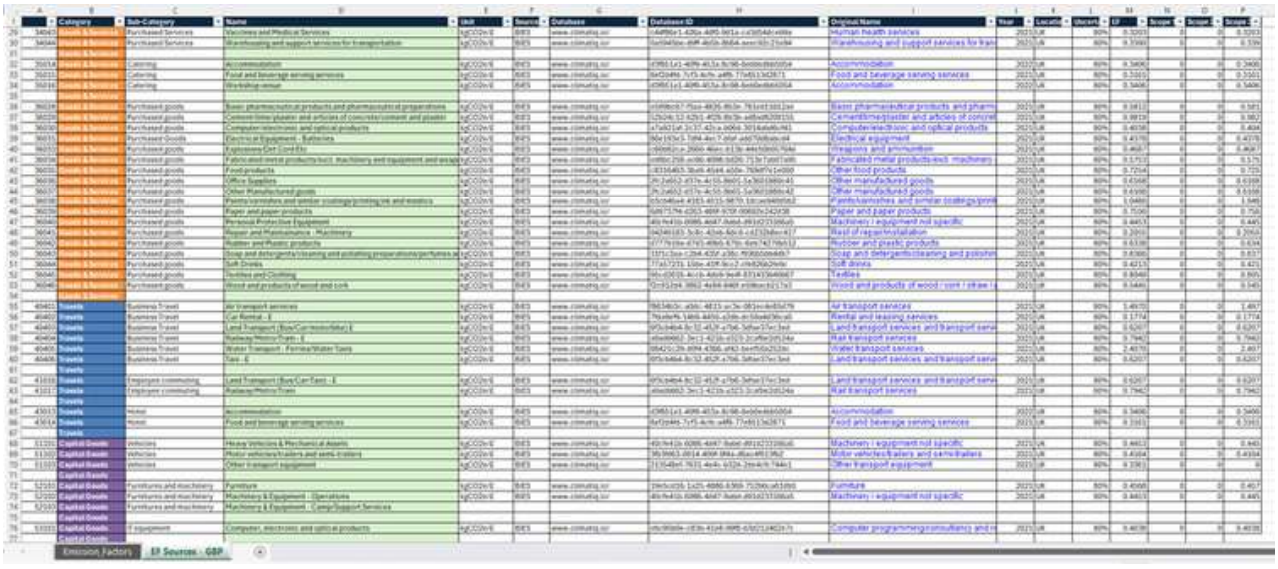
Annex 1:
Emission Factor Tables

A full emissions factor database was maintained and referenced for all calculations in this report (see extract below). The factors were drawn from the Humanitarian Carbon Calculator (HCC), updated for spend based reporting with 2021 DEFRA factors to align with MAG's reporting currency (GBP). The full EF database, including sources, units, uncertainty ratings, and historic changes, is included as a supplementary annex.



Sample extract: raw data available upon request

The extract below shows the traceability of the DEFRA spend based Emissions Factors MAG have updated the HCC tool with.



Sample extract: raw data available upon request

Contact

Elliot Ball, Global Climate and Environment Advisor: Elliot.Ball@maginternational.org

www.maginternational.org

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