

# A FRAMEWORK FOR MILITARY GREENHOUSE GAS EMISSIONS REPORTING

## MILITARY EMISSIONS GAP - JUNE 2022

### Overview

We are seeing long overdue attention on the contribution that militaries, and to a much lesser extent, conflicts, make to climate change. An increasing number of states are including military emissions in their domestic net zero targets, and NATO and other actors have acknowledged that these targets will not be met without military emissions reductions.<sup>1</sup> Because militaries have historically been largely excluded from emissions reduction goals, their ability to track their emissions lags behind other sectors. Another result of this exclusion has been that the quality of voluntary emissions reporting to the UN Framework Convention on Climate Change (UNFCCC) is poor.<sup>2</sup>

Because militaries lack data on their emissions, they are unable to define realistic goals for emissions reductions. In 2021, NATO announced that it was developing a methodology for its members for tracking and reporting emissions. It is vital that this methodology is transparent and credible; this is also true of methodologies being developed independently by national governments. The end goal should be a common international approach to reporting, under the framework of the UNFCCC. In this report, we examine the need for emissions reporting, its functions and components, and set out an initial framework for the military sources that emissions reporting should cover.<sup>3</sup>

### Key messages

- **Militaries are carbon intensive and have a significant role to play in reducing global GHG emissions.**
- **Military exemptions and national security should not be used to exempt the military from reporting obligations.**
- **Militaries need to engage with their extensive supply chains on emissions tracking at the earliest opportunity.**
- **Alongside reporting their Scope 1, 2 and 3 emissions, militaries should begin exploring how they can begin to track and report the emissions associated with their warfighting activities – Scope 3 Plus.**

1. NATO chief: Armies must keep pace with global climate efforts, *Reuters*, November 2021: <https://www.reuters.com/business/environment/nato-chief-armies-must-keep-pace-with-global-climate-efforts-2021-11-02>

2. Did NATO members just pledge to reduce their military GHG emissions?, Conflict and Environment Observatory, June 2021: <https://ceobs.org/did-nato-members-just-pledge-to-reduce-their-military-ghg-emissions>

3. We would like to acknowledge and thank the following who provided valuable feedback in preparing this framework: Dr Oliver Belcher, University of Durham; Dr Oliver Heidrich, University of Newcastle; Dr Benjamin Neimark, University of Lancaster; Dr Stuart Parkinson, Scientists for Global Responsibility; and Mohammad Rajaeifar, University of Newcastle.

# Contents

<b>1. Context</b>	<b>3</b>
<b>2. Purpose of this framework</b>	<b>6</b>
<b>3. The importance of early supply chain engagement</b>	<b>7</b>
<b>4. Reporting framework</b>	<b>8</b>
<b>4.1 Required components</b>	<b>8</b>
<b>4.2 Required outcomes</b>	<b>9</b>
<b>4.3 Proposed emissions reporting categories for militaries</b>	<b>9</b>
<b>5. Next steps</b>	<b>12</b>

## List of figures

Reporting of GHG emissions based on military fuel use to the UNFCCC in 2021 for the top 20 ranked countries in terms of military expenditure	3
Scoping the availability of military greenhouse gas emissions data	4
Essential components for transparent military greenhouse gas reporting	5
The military supply chain and its contribution to military greenhouse gas emissions	7
Key components for effective military GHG reporting	8
Key outcomes expected for military GHG reporting	9
Proposed scopes of military GHG emissions	10
Key categories for peacetime military GHG reporting (Scope 1 and 2)	10
Key categories for peacetime military GHG reporting (Scope 3)	11
Other non-CO2 effects	11
Key categories for wartime military GHG reporting	12

## About this report

This report was prepared by the Conflict and Environment Observatory as part of its Military Emissions Gap project, which is a collaboration with the universities of Lancaster and Durham: [www.militaryemissions.org](http://www.militaryemissions.org)

The report and research was funded by The Minor Foundation for Major Challenges and published in June 2022. Its author, Linsey Cottrell, can be reached at: [contact@ceobs.org](mailto:contact@ceobs.org)

CEOBS  
The Chapel, Scout Road, Hebden Bridge,  
West Yorkshire, UK.  
HX7 5HZ



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# 1. Context

The world's militaries remain heavily reliant on fossil fuels. Independent reporting has found that the US military is the largest single institutional consumer of hydrocarbons globally. This ranks its annual greenhouse gas (GHG) emissions higher than 140 countries.<sup>4</sup> As global military spending increases, military GHG emissions are also set to increase.

**FIGURE 1. REPORTING OF GHG EMISSIONS BASED ON MILITARY FUEL USE TO THE UNFCCC IN 2021 FOR THE TOP 20 RANKED COUNTRIES IN TERMS OF MILITARY EXPENDITURE (SIPRI, 2020).**

Country	Military expenditure (2020), US\$ billions	Military expenditure, % of GDP	GHG emissions reported to the UNFCCC under category 1A5 which includes military fuel use, million tonnes CO <sub>2</sub> e (2021)	Commentary on military data reported to the UNFCCC
United States	778.2	3.72	17.2	<b>Poor</b> - data reported is not clearly disaggregated.
China	252.3	1.71	108.0	<b>Poor</b> - data reported but not specified as military.
India	72.9	2.78	Not known	<b>Very poor</b> - no data is reported
Russia	61.7	4.16	27.9	<b>Poor</b> - disaggregated data is not reported.
United Kingdom	59.2	2.19	1.7	<b>Poor</b> - disaggregated data is not reported.
Saudi Arabia	57.5	8.22	Not known	<b>Very poor</b> - no data is reported.
Germany	52.8	1.37	0.9	<b>Fair</b> - data is reported.
France	52.7	2.01	1.6	<b>Poor</b> - disaggregated data is not reported.
Japan	49.1	0.99	Not known	<b>Very poor</b> - no data is reported.
South Korea	45.7	2.80	3.1	<b>Poor</b> - data is reported but not specified as military.
Italy	28.9	1.53	0.5	<b>Poor</b> - disaggregated data is not reported.
Australia	27.5	2.07	0.8	<b>Poor</b> - disaggregated data is not reported.
Canada	22.8	1.38	0.3	<b>Poor</b> - disaggregated data is not reported.
Israel	21.7	5.40	Not known	<b>Very poor</b> - no data is reported.
Brazil	19.7	1.37	Not known	<b>Very poor</b> - no data is reported.
Turkey	17.7	2.46	Not known	<b>Very poor</b> - no data is reported.
Spain	17.4	1.36	0.5	<b>Poor</b> - disaggregated data is not reported.
Iran	15.8	8.25	Not known	<b>Very poor</b> - no data is reported.
Poland	13.0	2.19	Not known	<b>Very poor</b> - no data is reported.
Netherlands	12.6	1.38	0.2	<b>Poor</b> - disaggregated data is not reported.

Source: [www.militaryemissions.org](http://www.militaryemissions.org)

Militaries have begun to recognise their outsized role in contributing to climate change. The US,<sup>5</sup> UK<sup>6</sup> and some European Union Member States (such as France,<sup>7</sup> Germany,<sup>8</sup> Italy<sup>9</sup>)

4. Belcher et al, *Hidden carbon costs of the "everywhere war": Logistics, geopolitical ecology, and the carbon boot-print of the US military*, Transactions IGB, June 2019: <https://doi.org/10.1111/tran.12319>; Crawford, *Pentagon Fuel Use, Climate Change, and the Costs of War*, Costs of War Project, June 2019: <https://tinyurl.com/2p8wx8x7>

5. US Army, *Climate strategy*, February 2022: [https://www.army.mil/e2/downloads/rv7/about/2022\\_army\\_climate\\_strategy.pdf](https://www.army.mil/e2/downloads/rv7/about/2022_army_climate_strategy.pdf)

6. UK MoD, *Climate Change and Sustainability Strategic Approach*, March 2021: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/973707/20210326\\_Climate\\_Change\\_Sust\\_Strategy\\_v1.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/973707/20210326_Climate_Change_Sust_Strategy_v1.pdf)

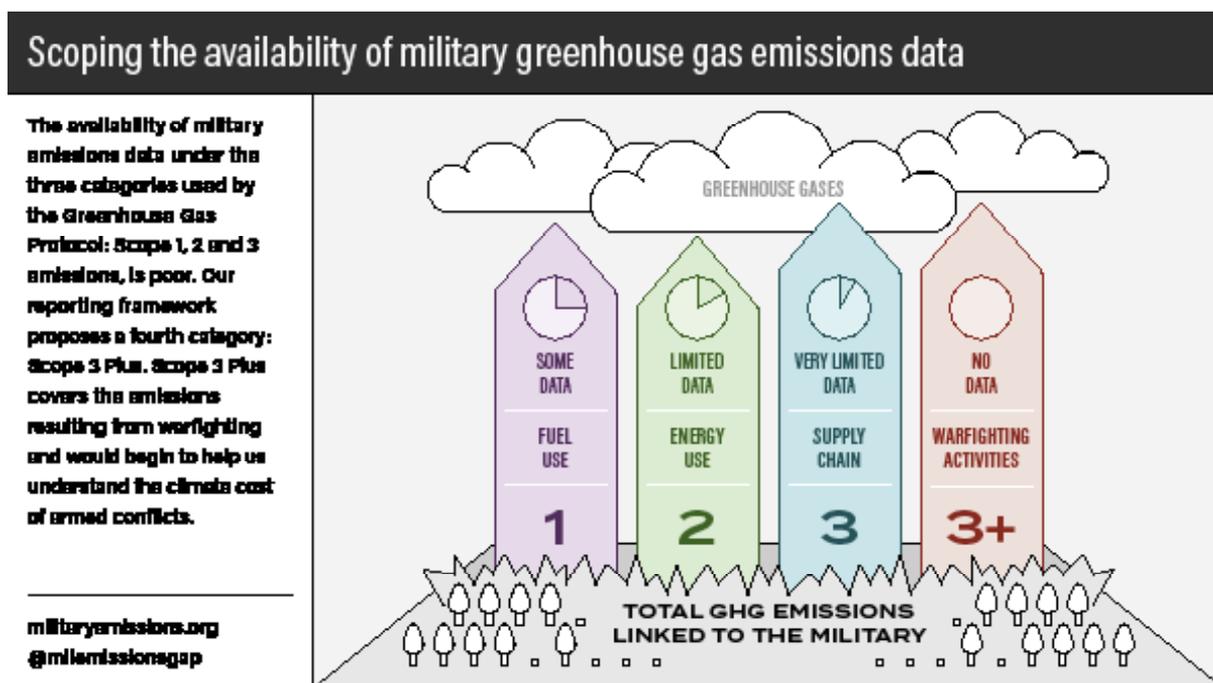
7. Ministère des Armées, *Stratégie Climat & Défense*, April 2022: [https://www.defense.gouv.fr/sites/default/files/tronc\\_commun/28.04.2022%20Strat%C3%A9gie%20climat%20et%20d%C3%A9fense.pdf](https://www.defense.gouv.fr/sites/default/files/tronc_commun/28.04.2022%20Strat%C3%A9gie%20climat%20et%20d%C3%A9fense.pdf)

8. Bundesministeriums der Verteidigung, *Nachhaltigkeitsbericht des Bundesministeriums der Verteidigung und der Bundeswehr*, 2018: <https://tinyurl.com/yv5xy2r8>

9. Stato Maggiore Della Difesa, *Piano per la Strategia Energetica della Difesa*, 2019: [https://www.difesa.it/Content/Struttura\\_progetto\\_energia/Documents/Piano\\_SED\\_2019.pdf](https://www.difesa.it/Content/Struttura_progetto_energia/Documents/Piano_SED_2019.pdf)

and the Netherlands<sup>10</sup>) are making progress with military energy policies and initiatives to support the move to lower carbon energy use and reduce military reliance on fossil fuels. GHG reporting is required to monitor progress and the effectiveness of these GHG reduction strategies.

The UN Framework Convention on Climate Change (UNFCCC) obliges some states to report on their GHG emissions every year, but reporting military emissions is voluntary and not consistent across countries. For the 20 top military spending countries in 2021, only Germany was reporting its GHG emissions from military fuel use in line with the basic UNFCCC requirements. All militaries need to urgently improve their GHG reporting (Fig 1).



Scrutiny can help drive GHG emission reductions, and transparency makes it possible to monitor any progress towards them. The GHG management hierarchy is to eliminate emissions first, then reduce, substitute and compensate. But GHG emissions cannot be effectively managed without measuring them.

Robust and transparent GHG reporting is needed to support effective decision making and military carbon management. Without a clear understanding of the GHG emissions attributed to the military, it is impossible to determine the credibility of their GHG reduction strategies.

In 2021, NATO announced plans to develop a methodology for GHG reporting. This was deemed necessary for consistency and because many of its contributing nations lacked GHG accounting systems of their own. This framework sets our minimum expected requirements for what NATO's GHG reporting methodology, and those of militaries more broadly, should include.

Military GHG reporting and carbon management must drive whole life GHG reductions throughout military activities and the military supply chain. There are five essential requirements for a GHG reporting framework, namely: to be relevant, comprehensive,

10. Minister en Staatssecretaris van Defensie, *Defensie Energie en Omgeving Strategie 2019-2022*, 2019: <https://zoek.officielebekendmakingen.nl/kst-33763-152.html>

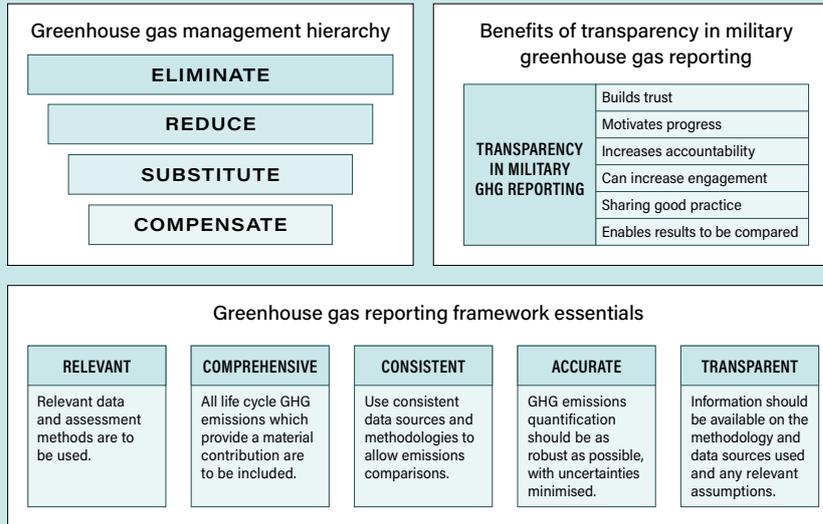
consistent, accurate and transparent.

Without a common approach to reporting, one cannot usefully compare between militaries, and it is difficult to judge the performance of countries. While NATO is showing leadership on military emissions reporting, it is vital that we work towards a global standard and level playing field for military emissions, as part of global GHG accounting and our global response to the climate crisis.

## Essential components for military greenhouse gas reporting

Militaries cannot manage what they are not measuring, so following a clear reporting framework is the first step to reducing emissions. A level global playing field for military emissions reporting under the framework of the UNFCCC will create transparency and drive much needed action.

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Transparency is especially important for building trust and confidence in the effectiveness of military climate and GHG reduction policies. For example, the Enhanced Transparency Framework is critical to the UNFCCC,<sup>11</sup> and to reaching the goals of the Paris Agreement.<sup>12</sup> Regular reporting helps to assess progress towards GHG reduction commitments, and identify where further support is needed. Transparency efforts are particularly important around military emissions in light of the historic reticence of some states to publish data on perceived national security grounds. Climate change is a common security threat to us all, and a failure to act on military emissions undermines national and human security.

With heightened public concern and awareness about climate change, there is also increased sensitivity to false claims and greenwashing. Accountability is important to all stakeholders – this includes the general public and taxpayers, other government institutions, civil society organisations, as well as internal military and civilian staff. Transparency and external scrutiny can increase internal engagement and motivate an organisation to make progress. Transparency also enables opportunities to share achievements and good practice. National security concerns should not be used as an excuse for avoiding transparency; in the exceptional cases where it is required, the disclosure of genuinely sensitive activity data can be avoided by using third party data assurance.

This framework sets out minimum requirements to ensure that GHG reporting and reduction

11. UNFCCC, *Introduction to Transparency*, online: <https://unfccc.int/Transparency>

12. UNFCCC, *Key aspects of the Paris Agreement*, online: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/key-aspects-of-the-paris-agreement>

targets are considered across every aspect of military activity and procurement. The allocation of responsibility between belligerents for GHG emissions incurred by warfighting activities – such as landscape fires and damage to infrastructure – is not addressed in this framework. The allocation of responsibility will be contentious and complex, but it remains critical that emissions from warfighting activities are not excluded from international reporting obligations.

## 2. Purpose of this framework

Militaries have a significant role to play in reducing global GHG emissions. The purpose of this framework is to set out the criteria required for the comprehensive military GHG reporting necessary in order to set targets for meaningful GHG emissions reductions.

This framework can be used by a range of stakeholders – including government bodies, the military supply chain, civil society organisations and the public – to examine the scope and provision of military GHG reporting, identify where gaps in reporting categories exist and highlight areas for improvement.

The framework addresses all aspects of military activities and procurement, including:

- Operation of military bases and estate assets.
- Land management across the estate, including training and military exercise areas.
- Projects, including but not limited to construction, research and development.
- Equipment procurement and supply chain.
- Equipment use, including aircraft, land vehicles, marine vessels and spacecraft.
- End of life and waste management needs.
- Peacekeeping and humanitarian activities.
- Warfighting impacts, such as fires and damage caused by weapons use, damage to critical infrastructure, land degradation, deforestation, debris management and disposal, and post-conflict reconstruction.
- Other activities of civilian support agencies.

There is already abundant GHG quantification guidance within the public domain, such as the GHG Protocol,<sup>13</sup> and the Science Based Targets Initiative (SBTi).<sup>14</sup> This framework does not seek to replicate existing guidance or provide detailed quantification methods. The GHG Protocol has defined an assessment standard whereby organisations report their emissions in three main categories – Scopes 1, 2 and 3.<sup>15</sup> See the reporting categories section below.

The military, however, is unique given the multiple indirect emissions that can result from its warfighting activities. We describe these military-related indirect emissions as ‘Scope 3 Plus’ – a category that is vital for understanding the climatic consequences of armed conflicts. This is an understudied area and it is important that these elements are incorporated into GHG accounting, highlighting where gaps in tracking such emissions exist and where there is a need for the development of agreed measurement tools.

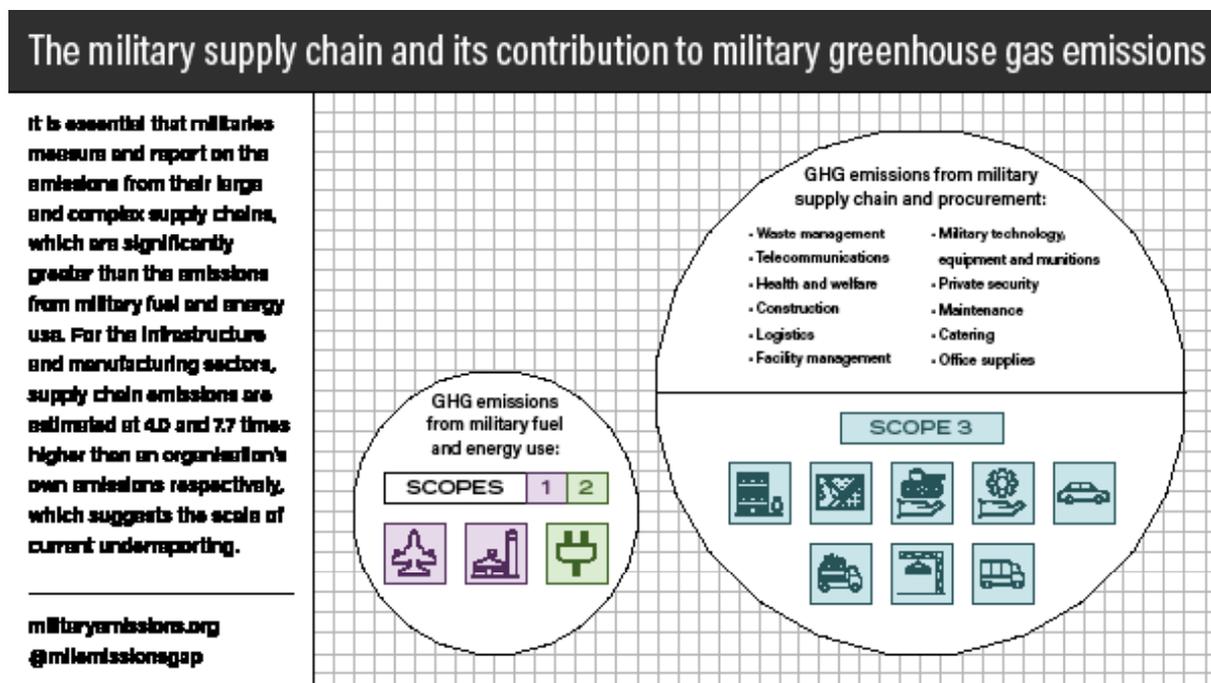
13. The Greenhouse Gas Protocol: <https://ghgprotocol.org>

14. Science-based Targets Initiative: <https://sciencebasedtargets.org>

15. Greenhouse Gas Protocol, *The GHG Protocol Corporate Accounting and Reporting Standard*, 2015: <https://ghgprotocol.org/corporate-standard>

### 3. The importance of early supply chain engagement

Militaries have extensive and complex supply chains, comprising a large proportion of a military's total GHG emissions. Emissions from commercial supply chains typically far exceed an organisation's own emissions, with estimates varying depending on sector. Supply chain emissions for the infrastructure and manufacturing sectors, for example, are estimated at 4.0 and 7.7 times higher than operational emissions, respectively.<sup>16</sup>



Engagement across the whole military supply chain is fundamental to properly report GHG emissions and maximise GHG reduction opportunities. This includes both the military technology sector and the wider supply chain, such as IT and telecommunications, facility management and maintenance, construction, waste, logistics, health, welfare and catering. Early engagement is required in planning or designing new equipment or projects, and fundamentally, evaluating the basic need at the onset and evaluating alternative approaches where these would help achieve emissions reductions.

Military engagement with its supply chain is key. Compared to other sectors, the military technology sector is at an early stage and to date has primarily focused on performance, reliability and safety rather than energy efficiency or carbon footprint. It is worth noting that the long development times and service lives of many types of military equipment make it particularly critical that suppliers are provided with efficiency guidance far ahead of emissions target dates. In response to its Environmental, Social and Governance (ESG) obligations, the military technology sector is already taking steps to improve its GHG reporting, with some engaging in initiatives such as the UN Global Climate Action.<sup>17</sup> A Code of Practice on GHG reporting has also been jointly developed by the UK MOD's Defence Suppliers Forum (DSF) and industry. The ADS – the UK trade association of the aerospace and defence industries – has an ongoing programme to support member organisations to understand their GHG reporting obligations.<sup>18</sup>

16. Carbon Disclosure Project, *Transparency to transformation: A chain reaction - CDP Global Supply Chain Report, 2020*: [https://cdn.cdp.net/cdp-production/cms/reports/documents/000/005/554/original/CDP\\_SC\\_Report\\_2020.pdf?1614160765](https://cdn.cdp.net/cdp-production/cms/reports/documents/000/005/554/original/CDP_SC_Report_2020.pdf?1614160765)

17. UNFCCC, *Global Climate Action, Actor tracking*, online: <https://climateaction.unfccc.int/Actors>

18. ADS, *Measuring Greenhouse Gas Emissions in the Defence Sector – a Code of Practice*, 2021: <https://www.adsgroup.org.uk/blog/measuring-greenhouse-gas-emissions-in-the-defence-sector-a-code-of-practice>

## 4. Reporting framework

### 4.1 Required components

We have identified 15 core components for meaningful and effective military GHG emissions tracking and reporting. This list should be viewed as a foundation, rather than as exhaustive.

<b>KEY COMPONENTS FOR EFFECTIVE MILITARY GHG REPORTING</b>	
<b>1</b>	The GHG reporting must follow the five essential principles, namely to be: relevant, comprehensive, consistent, accurate and transparent.
<b>2</b>	Military derogations and national security should not be used to exempt the military from reporting obligations.
<b>3</b>	Reporting criteria should reflect existing standards and norms. The criteria should be based on established international standards such as the ISO series (14040, 14044, 14064, 14067, and forthcoming 14068) and the GHG Protocol.
<b>4</b>	The scope of the GHG reporting must be clearly set out, defining the operational boundaries for reporting.
<b>5</b>	Provide clear definitions and use accessible, unambiguous language.
<b>6</b>	Any claims must be supported by data. Data could be 'primary' or 'secondary'. Primary data is directly collected/ measured from specific activities and includes data provided by suppliers. Secondary data may be industry-averaged data sourced from published databases or life-cycle inventories. Although secondary data can be useful, cost effective and easier to collect, heavy reliance on secondary data leads to the risk of being too generic and may not be truly representative of specific activities.
<b>7</b>	Accuracy and uncertainties in the datasets must be defined.
<b>8</b>	Data omissions and any gaps in GHG emission calculations must be clearly stated and the reasons justified.
<b>9</b>	Where data gaps exist, timeframes must be set-out for providing such data. Proxy data and industry averages could be used to fill data gaps, but any problem areas, uncertainties and data limitations must be reported, as well as future steps to establish or adopt methodologies.
<b>10</b>	Methodologies and the source of emission factors used must be cited.
<b>11</b>	GHG emissions must be reported in separate accounts from any offsets being used to meet GHG reduction targets. Major reductions are needed at source before resorting to offsetting or compensation initiatives. The 'Net-Zero Standard' developed by the SBTi includes a provision that offsets should only amount to 5-10% of mitigation action. Carbon sequestration within the military estate – as one type of offsetting – may make an important contribution to improvements in soil health, and habitat management, and will also benefit biodiversity and reduce the risk of soil erosion, as well as storing carbon.
<b>12</b>	Near-term emission reduction targets – e.g. for 2025 and 2030 – should be specified as well as longer-term targets – e.g. for 2040 and 2050.
<b>13</b>	Reporting must be clear about any challenges to meeting any carbon reduction targets ahead, such as timeframes, reliance on emerging technologies and fuel substitutes (such as bio and synthetic fuels) and equipment with locked-in fossil fuel dependencies.
<b>14</b>	Responsibilities for the reporting must be clear.
<b>15</b>	Monitoring, reporting and independent verification of any GHG removal initiatives should be detailed.

## 4.2 Required outcomes

We have also identified 10 justifications for designing and implementing effective military emissions tracking and reporting systems.

KEY OUTCOMES EXPECTED FOR MILITARY GHG REPORTING	
1	Sharing of key information with the public and across the military supply chain to allow disclosure of GHG emissions data. Accountability and transparency of GHG reporting are critical to the reduction of GHG emissions, but may conflict with security sensitivities and confidentiality concerns, such as those linked with military technology suppliers. This can be overcome, for example, by suppliers reporting emissions data that has third party assurance, rather than sharing detailed information on their operations.
2	Setting of realistic GHG reduction targets and capturing data to understand where the greatest attention is needed.
3	Establishing a baseline against which to assess GHG reduction performance.
4	Enabling a review of performance against targets and benchmarks.
5	Establishing a mechanism by which GHG reduction performance is reported.
6	Defining the quantification methodologies to be applied.
7	Defining the scope and boundaries of reporting.
8	Identification of improvement actions as part of a continuous improvement process.
9	Ensuring transparency and accountability through communicating performance.
10	Sharing good practice and knowledge across the military sector

## 4.3 Proposed emissions reporting categories for militaries

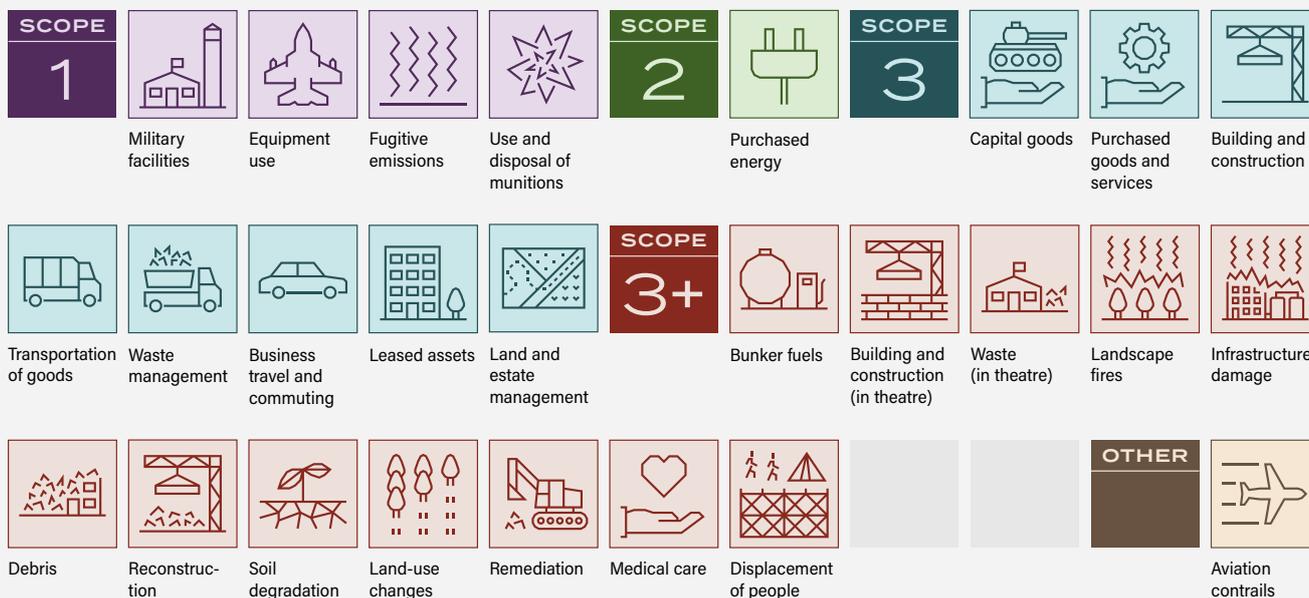
The proposed reporting categories for military GHG reporting include Scope 1, Scope 2 and Scope 3 emissions - as set out by the GHG Protocol - as well as the suggested Scope 3 Plus, which relates to emissions associated specifically with warfighting activities. The indirect Scope 3 emissions include upstream activities, such as purchased and capital goods - which means the consideration of the lifecycle emissions from raw material extraction, component manufacture, final assembly and transportation of goods - as well as downstream activities, like waste management and end-of-life disposal.

Note that the categories reported to the military by its supply chain will vary from those listed below and depend on the operating boundaries of the supply chain organisation in question. The GHG Protocol lists 15 Scope 3 categories, intended to capture emissions from the main activities of an organisation. Scope 3 activities not included in these 15 categories can also be reported, but with focus on the most material.

In accordance with the GHG Protocol, any GHG removals - such as from carbon sequestration across the military estate - should not be included in Scope 3 but may be reported separately.

# Proposed scopes of military greenhouse gas emissions

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KEY CATEGORIES FOR PEACETIME MILITARY GHG REPORTING	
<b>Scope 1: Direct GHG emissions</b>	<b>From sources that are owned or controlled by the organisation</b>
<b>Stationary combustion</b>	Fuel combustion in static units including solid, liquid or gaseous fuel use for heating, cooling or generators.
<b>Mobile combustion</b>	Fuel combustion from mobile equipment use, including aircraft, land vehicles, marine vessels and spacecraft (within the troposphere and stratosphere only).
<b>Waste management and disposal</b>	Fugitive emissions, e.g. methane, arising from treatment and disposal of solid, liquid and gaseous waste and wastewater, in facilities owned or controlled by the military.
<b>Other fugitive emissions</b>	Mainly from use of HFCs, PFCs or SF6 in refrigeration, air conditioning, radar and electrical equipment and from other chemical use (such as de-icers) or losses.
<b>Use and disposal of munitions</b>	Detonation of munitions in training and active combat, including the incineration, detonation, open burning or treatment of end-of-life and obsolete explosive ordnance, in facilities owned or controlled by the military.
<b>Scope 2: Indirect GHG emissions</b>	<b>From purchased or acquired energy not owned or controlled by the organisation</b>
<b>Purchased energy</b>	Includes electricity, steam, heat and cooling for use at military bases and buildings.

<b>KEY CATEGORIES FOR PEACETIME MILITARY GHG REPORTING</b>	
<b>Scope 3: Other indirect GHG emissions</b>	<b>From other sources resulting from activities of an organisation, but occur from sources not owned or controlled by that organisation</b>
<b>Capital goods</b>	Includes the raw material extraction, manufacture and transportation of all major military equipment (for land, sea, air, space), civilian equipment (including business transport fleet) and IT systems.
<b>Purchased goods</b>	Includes the raw material extraction, manufacture and transportation of other purchased military and civilian goods (such as weapons, combat gear, clothing, IT, office equipment and perishables).
<b>Purchased services</b>	Includes services such as the provision of private military and security companies, logistics, maintenance, IT and telecommunication support, catering etc.
<b>Building and construction</b>	Includes the construction and renovation of buildings and similar assets.
<b>Fuel and energy related activities</b>	Includes the raw material extraction, manufacture and transportation of fuels and energy, not already included in Scope 1 and 2.
<b>Upstream transport and distribution</b>	Includes the transportation and distribution of products and services purchased not included above, in vehicles not owned or controlled by the military.
<b>Waste management and disposal</b>	Disposal and treatment of solid, liquid and gaseous waste and wastewater in facilities not owned or controlled by the military. This includes fugitive emissions (e.g. methane) and emissions from the incineration, detonation, open burning or treatment of end-of-life and obsolete explosive ordnance.
<b>Business travel</b>	Transportation of military or civilian staff for business-related activities in vehicles not owned or operated by the military.
<b>Commuting of military and civilian staff</b>	Transportation of military or civilian staff between their homes and place of work in vehicles not owned or operated by the military.
<b>Upstream leased assets</b>	Operation of assets leased by the military and not included in Scope 1 and 2.
<b>Downstream leased assets</b>	Operation of assets owned by the military and leased to other entities but not included in scope 1 and scope 2.
<b>Land and estate management</b>	Includes damage to natural ecosystems, deforestation, impacts on agricultural areas, wetlands and fires caused by training and land use practices.

<b>OTHER</b>	
<b>Other non-CO2 effects</b>	<b>From other sources resulting from military activities and warfighting</b>
<b>Aviation contrails and non-CO2 effects<sup>1</sup></b>	Combustion of fuels used for international aviation, spacecraft launches, land-based and maritime transport, and not reported under Scope 1 or Scope 2.
<p><i>1. Water vapour, contrails and non-CO2 effects are recognised as a significant contribution to the effects of aviation on climate change but are not widely taken into account. The UK Government Conversion Factors for GHG reporting (UKCF) recommend including the indirect effects of non-CO2 emissions. The UKCF incorporate a 90% increase in CO2 emissions to approximate the indirect impact of non-CO2 emissions from aviation, yet acknowledge that there remains significant scientific uncertainty surrounding the quantification of these impacts.</i></p>	

<b>KEY CATEGORIES FOR WARTIME MILITARY GHG REPORTING</b>	
<b>Scope 3 Plus: Other indirect GHG emissions linked to the military</b>	<b>From other sources resulting from military activities and warfighting</b>
<b>International bunker fuels</b>	Combustion of fuels used for international aviation, spacecraft launches, land-based and maritime transport, and not reported under Scope 1 or Scope 2.
<b>Building and construction</b>	Includes the construction of bases, buildings and similar assets in theatre.
<b>Waste management and disposal</b>	Incineration, disposal, haulage and treatment of military-derived solid waste and wastewater, from military deployment overseas and not included above.
<b>Landscape fires<sup>1</sup></b>	Includes fires caused during combat and associated operations.
<b>Fires and damage to infrastructure</b>	Includes fires and damage to infrastructure, as well as any fugitive emissions due to leaks or losses from infrastructure (such as methane).
<b>Debris management and disposal</b>	Includes the building debris generated from the use of explosive weapons during warfighting, haulage and waste management.
<b>Soil degradation</b>	Includes soil erosion, disturbance and desertification, which can accelerate the loss of carbon from soils and reduce their potential to be effective carbon sinks
<b>Landscape and land use changes</b>	Includes damage to natural ecosystems, deforestation, impacts on agricultural areas, wetlands and fires caused by changes in land-use practices.
<b>Soil and environmental remediation/restoration needs</b>	Includes the raw material extraction, manufacture and transportation of restoration materials, as well as emissions from the remediation/restoration activities and disposal or treatment of any contamination or hazardous waste.
<b>Medical care for military and civilian casualties</b>	Includes military and civilian casualties, and the logistics and provision of medical equipment and facilities, medical staff and management of medical waste.
<b>Displacement of civilians and humanitarian support<sup>2</sup></b>	Includes internally displaced people and transboundary refugees, and the logistics and provision of food, shelter, welfare management.
<b>Post-conflict reconstruction</b>	Includes the raw material extraction, manufacture and transportation of construction materials, as well as emissions from the construction activities.
<p>1. Includes fires in natural forests, plantations, shrub, grassland, pasture, peatlands, agricultural land and peri-urban areas.</p> <p>2. Liaison with external humanitarian aid agencies or national governments required.</p>	

## 5. Next steps

Comprehensive military GHG reporting is in its infancy but as compliance with good practice increases, we encourage all stakeholders to use this framework to review the scope and alignment of reporting methodologies with the reporting requirements that the seriousness of the climate crisis demands.

Feedback is welcome and we aim to review this framework annually, providing updates where appropriate and signposting examples of good practice. This will be especially critical for the assessment and reporting of Scope 3 Plus, which has received very limited attention to date given the complexity and limitations in current reporting methodologies.