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MILITARY & ENVIRONMENT

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United States and European military’s impact on climate change

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IPB International Peace Bureau

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November 2019

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Marienstr. 19-20

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> *"If we're going to win on climate, we have to make sure we are counting carbon completely, not exempting different things like military emissions because it is politically inconvenient to count them, […] the atmosphere certainly counts the carbon from the military. Therefore, we must as well."*
>
> *Stephen Kretzmann*[1]

In the coming decade, peace is threatened in many countries around the world by the risk of increasing global warming. The potential impact of climate change on the eruption of conflict was mentioned for the first time in the annual Global Peace Index in 2019. The likelihood of violent conflict is indirectly increased by the impacts of climate change due to the diminishing availability of resources and its repercussions on the threat to livelihoods and as the cause of mass migration. The scientific consensus on climate change is that trends in global warming are extremely likely to be due to human activities. The vast majority of active climate scientists agree that humans are responsible for the release of gases into the atmosphere that are the main cause of global warming. The dominant man-made greenhouse gas (GHG) is carbon dioxide (CO2) and therefore, the total amount of GHGs produced to directly and indirectly support human activities is often described as a 'carbon footprint'. The main driving force behind GHG emission is the burning of fossil fuels in order to move all sorts of vehicles, generate electricity and operate homes and businesses. Additionally, one of the biggest culprits of burning oil is the military and, whenever and wherever there is a conflict or a major military exercise, the amount of oil burned increases also releasing an increased burden of smoke. War and militarism, and their associated 'carbon boot-prints', are severely accelerating climate change.

Already in the last Democratic presidential debate four years ago, the for 2020 again running Vermont Senator Bernie Sanders warned that countries around the world are "going to be struggling over limited amounts of water, limited amounts of land to grow their crops

1A.Neslen (Dec 2015) *Pentagon to lose emissions exemption under Paris climate deal.* the Guardian retrieved from https://bit.ly/34oomcF

and you're going to see all kinds of international conflict." Militaries around the world have recognised that the potential consequences of man-made climate change are "threat multiplier" that can exacerbate other conflicts and risks and therefore need to be addressed. Nonetheless, the military's climate policy remains contradictory: The US military acknowledges that it is the single largest institutional consumer of oil and rather aims to increase this consumption instead of decreasing global warming. By keeping up its capability of projecting power everywhere in the world and fostering its quest for security, the US Department of Defence (DoD) has a higher military budget than any other country in the world. An authorised number of over $700 billion in Fiscal Year 2019 is much more than the combined military spending of Russia and China. However, according to an Oxford research group, the entire expenditures worldwide on mitigating and adapting to global warming are decisively lower than military spending. By a ratio of 1 to 12, international climate finance was in 2016 far lower than the global military budget.

As previously mentioned, the potential impact of climate change on the outbreak of conflict has become a popular topic in recent studies and newspaper articles. The link between environment and security is moving into the spotlight, at least in the worlds of academia and the press, with a focus on GHG emissions due to civilian energy and fuel use. But another link, which is less discussed, is the direct impact of military activities on global warming. It's not just the rising temperature, which is increasing the risk of conflict but also the aftermath of the conflicts fought in the last few decades and the emphasis on militarism project every day. Such things come with an enormous 'carbon boot-print' and therefore have a crucial impact on global warming. It would seem that, even though the world recognises the potential consequences of climate change, it would rather spend money on military activities than on mitigating that change. The US military is not only the most funded army in the world, it is also "one of the largest polluters in history, consuming more liquid fuels and emitting more climate-changing gases than most medium-sized countries". The DoD's daily consumption alone is greater than the total national consumption of countries like Sweden, Switzerland or Chile. And the US has been continuously at war, or engaged in military actions, since late 2001. The US State Department and the military are employed in global operations in more than 80 countries and a recently published study reveals that in

the post-9/11 period, US taxpayers spent $6.4 trillion on wars and military actions in the Middle East and Asia.

The 'carbon boot-print' of the military not only due to war fighting but is also caused by different aspects of military activities at domestic and foreign bases. Moreover, all of these activities can be divided into three categories: the production of military equipment, the operation (e.g. energy and food supply) of military bases and the use of military vehicles. The total carbon emissions, however, are often divided into two main categories. Firstly, military estates, including military installations, domestic and foreign bases and secondly, and overwhelmingly, military capabilities, including equipment and operations. For example, take the American military with an armed force of more than two million people, 11 nuclear aircraft carriers, and the most advanced modern aircraft. All of this requires a great deal of energy, the demands of which are further aggravated by supply chains, with their extensive global network of cargo planes, container ships and trucks which together 'oil the wheels' of the war machine and its vast infrastructure. Every military capability, every mission, and every Service member depends on a reliable supply of energy. As a US general said in 2011, "Energy is the lifeblood of our warfighting capabilities." Ironically, an important fraction of the oil consumed in operations abroad, is used to protect access to foreign oil and maritime shipping lanes. Therefore, the consumption of oil relies on consuming more oil.

However, the military's significant contribution to climate change has still received little attention. It is not only the US army that has a severe impact on climate change, Europe's military is also running its bases and its various operations and contributing to the rise in carbon emissions. However, obtaining accurate data about any form of military energy consumption is very difficult, particularly in Europe. Retrieving such data in the US requires an approach through the Freedom of Information Act, which is still a massive bureaucratic obstacle. Some European countries do publish annual reports on sustainable development. For instance, the UK Ministry of Defence annually publishes a 'Sustainable MoD' report. Also, the German Ministry of Defence has a '*Nachhaltigkeitsreport*' (Sustainability Report) every year. Although, these reports often focus on progress and the contribution to sustainable development by the military and only includes limited data on carbon emission and no single 'official' total. It is no secret, that serious action on climate change demands dismantling vast sections of the military machine but it's no coincidence that military emissions tend to be

overlooked in climate change studies. Governments are well aware that a lack of transparency on consistent data provides less ammunition for critical studies. Therefore, despite being responsible for vast amounts of carbon emissions, the military sector has been granted a unique exemption from reducing, or even reporting, its contribution. It was the US that insisted on the military being exempt from climate change discussions and international agreements at the 1997 Kyoto Protocol and, even, though the US did not eventually ratify the Agreement, major pollution activities such as Pentagon weapons testing, military exercises, NATO operations and "peacekeeping" missions remain unconstrained.

Exemption from pollution regulations

The following section elaborates on the development and contents of the two primary international climate agreements – the Kyoto Protocol and the 2015 Paris Agreement. This will help an understanding of why and how the military has been omitted from climate change discussions and international agreements.

The first World Climate Conference took place in 1979 and began the process of discovering more about the science of climate change. Subsequent conferences and reports released in the early 1990s established the gravity of the issue and helped to realize the need for a global treaty on climate change. The United Nations General Assembly led the negotiations to create a framework for such a treaty, producing several important conventions such as the United Nations Framework Convention on Climate Change (UNFCCC), the UN Convention on Biological Diversity and the UN Convention to Combat Desertification. In 1994, the UNFCCC entered into force but by then it was clear then an international agreement that would legally bind countries to goals to reduce emissions was necessary

Thus, negotiations for such an international agreement began. The Kyoto Protocol would enter into force in 1997, and legally bound only the industrially developed countries to reduce emissions. During these discussions the United States fought hard to keep the

reporting of military emissions, and their possible reduction, out of the agreement. US delegates argued that it would undermine their national security. They were successful in arguing for the exemption of certain military activities, specifically fuels purchased and or used in overseas operations. This would ultimately allow the US to keep its military operations free from scrutiny and to keep the military from being a target for emission reductions. The omission of military activities can be found explicitly stated in the following two quotes taken from the 1997 Report of the Conference of the Parties Third Session:

> "…emissions based upon fuel sold to ships or aircraft engaged in international transport should not be included in national totals…"
>
> "Decides that emissions resulting from multilateral operations pursuant to the Charter of the United Nations shall not be included in national totals but reported separately; other emissions related to operations shall be included in the national emissions totals of one or more Parties involved."

This means that signatory countries are not required to report back to the UN on military emissions from international air or sea transport and or multilateral operations in other countries. This left a major gap in understanding the exact responsibility of the effect of a country's military on the climate. Despite their success in omitting the military, the US did not proceed to ratify the Kyoto Protocol. However, the military exemption continued and has become the norm in international discussions and agreements on climate change.

Paris Agreement

Regardless of what was learned about climate change through research reports, little was done to include the contribution of the military to climate change or to reduce it. The latest UN climate agreement, the Paris Agreement, is arguably a testament to this. The Paris Climate Agreement was the result of the Paris Climate Conference (COP21) held in December 2015. The legally binding agreement included 195 signatory countries with a structure based on consensus-building, allowing for voluntary and nationally determined targets to be set. While countries are not explicitly obliged to cut military emissions, equally, they are not automatically exempt from it either. Rather it is up to each individual state and their national

sectors to decide where to make the cuts in emissions before 2030, thereby making it difficult to not include the military as targets for reductions.

Country specific data for military's carbon emission

United States

The US Department of Defence does not publicly publish data on its carbon emissions, nor do they publish an annual report on sustainable development or anything similar. Nevertheless, the US Freedom of Information Act provides the public with the tool to request access to records from any federal agency, including the US Defence Logistics Agency (DLA). The DLA is responsible for managing the US military's supply chains, including its hydrocarbon fuel purchases and distribution.

US DoD greenhouse gas emissions:

- 2017: 59 million metric tons of CO2
- 2001-2017: 1,212 million metric tons of CO2

In June 2019 Neta C. Crawford published a study, as part of the 'Costs of War' project at Brown University's Watson Institute, titled "*The Pentagon, Greenhouse Gases & Climate Change*". The study explores the scale of and trends in the US DoD fuel use and GHG emissions and focuses on the portion of those emissions that are a consequence of the major post-9/11 US wars. Based on data from the Department of Energy, Crawford estimated "the total greenhouse gas emissions for standard and non-standard operations of the DoD from FY2001-2017 to be a total of 1,212 million metric tons of CO2 equivalent". Approximately 400 million metric tons are directly due to war-related consumption. The study shows that in any year the Pentagon's GHG emissions were greater than many mid-sized countries. For instance, in the year 2017, Sweden, Denmark and Finland all emitted less CO2 than the 59

million metric tons emitted by the US DoD. Moreover, the DoD is the single largest consumer of energy in the US, and in fact, the world's single largest institutional consumer of petroleum. Crawford assessed that, between 1998 and 2017, the US purchased 2.4 billion barrels of petroleum fuel. She further implies, that the US military emissions since the beginning of the Global War on Terror in 2001, are equivalent to the annual emissions of 257 million passenger cars - more than double the current number of cars on US roads. In Crawford's words: "The U.S. Department of Defence is the largest institutional consumer of fossil fuels in the world and a key contributor to climate change".

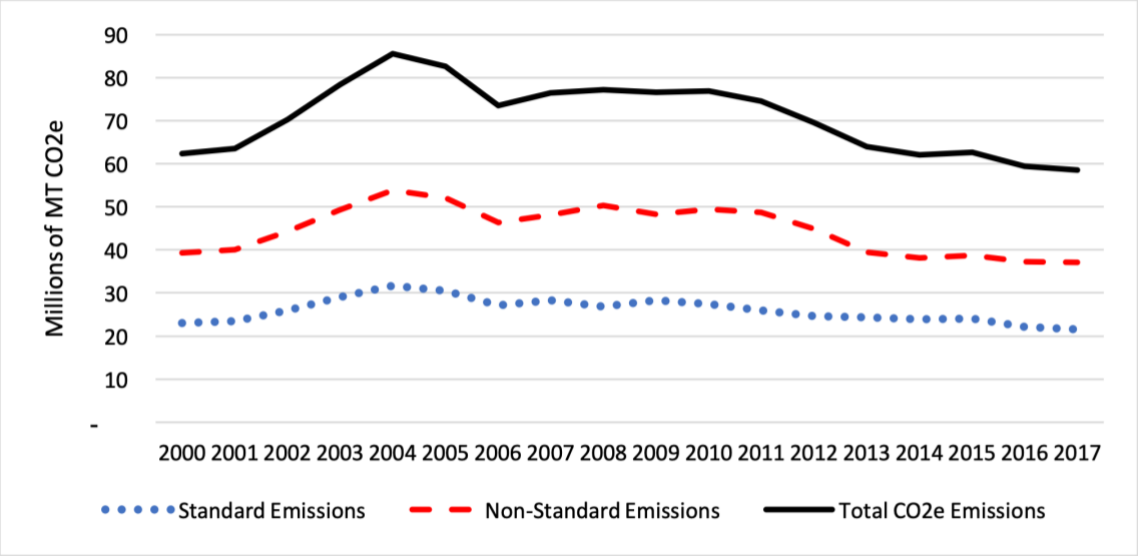

Figure 1. Estimate of DoD GHG Emissions, Millions of Metric Tons CO2 from Total and Non-Standard DoD operations 2001-2017

The entire study by Neta C. Crawford is available here: *"Pentagon Fuel Use, Climate Change, And The Costs Of War"*

Another paper published in 2019, assessed the US military's impact on climate by analysing the geopolitical ecology of its global logistical supply chains. Oliver Belcher, Patrick Bigger, Ben Neimark and Cara Kennelly explored the US military's impact on the climate by investigating the hidden carbon costs of "global war". Their study shows that action on climate change demands shutting down vast sections of the military machine. There are few activities on Earth as environmentally catastrophic as waging war. Significant reductions to the Pentagon's budget and shrinking its capacity to wage war would cause a huge drop in demand from the biggest consumer of liquid fuels in the world.

The entire study by Oliver Belcher, Patrick Bigger, Ben Neimark and Cara Kennelly is available here: Hidden carbon costs of the "everywhere war": Logistics, geopolitical ecology, and the carbon boot-print of the US military

Germany

Detailed information from the German Ministry of Defence on its carbon emissions is not publicly available. Nonetheless, a recent annual sustainability report (*Nachhaltigkeitsbericht 2018 des Bundesministeriums der Verteidigung und der Bundeswehr*), was published in 2018. However, this focuses primarily on the UN Sustainable Development Goals and how they apply to the German military. The only available data on carbon emissions that can be found in this report is from the amount of energy used by German military estates. With regard to that, the 2018 report estimates carbon emissions of around 1.05 million tonnes in 2017 from estates in the portfolio of the Federal Ministry of Defence alone.

Moreover, no recent study has focused primarily on German Ministry of Defence carbon emissions. German military's significant contribution to climate change has received little attention so far. However, the German left party, *die Linke,* recently submitted two small interpellations (*Kleine Anfragen aus dem Parlament an die Bundesregierung*) to the German government. Both of these addressed the German military's carbon footprint. However, the German government has not, as yet, responded to either:

- **Kleine Anfrage (small interpellation) 29.10.2019**
  der Abgeordneten Kathrin Vogler, Andrej Hunko, Heike Hänsel, Christine Buchholz, Zaklin Nastic, Dr. Alexander S. Neu, Victor Perli, Eva-Maria Schreiber, Helin Evrim Sommer, Dr. Kirsten Tackmann, Hubertus Zdebel und der Fraktion DIE LINKE.
  Militärische Aktivitäten der Bundeswehr und ihre Klimabilanz
- **Kleine Anfrage (small interpellation) 02.10.2019**
  der Abgeordneten Sevim Dağdelen, Heike Hänsel, Christine Buchholz, Andrej Hunko, Dr. Alexander S. Neu, Victor Perli, Eva-Maria Schreiber, Dr. Kirsten Tackmann, Alexander Ulrich und der Fraktion DIE LINKE.
  Das Militär und der Klimawandel – Die ökologischen Kosten der Bundeswehr

United Kingdom

Similarly, the UK has not made any recent study on carbon emissions due to MoD activities publicly available. However, like Germany, the MoD publishes an annual report (Sustainable MoD annual report 2017 to 2018) on its contribution to sustainable development, most recently for the financial year 2017 to 2018. Although, the UK report is more extensive than the German equivalent and includes environmental impacts from MoD estates, both in and outside the UK, as well as from military capability and equipment, including military operations. The report provides an overview of the department's progress in achieving both the sustainable MoD requirements and the greening government targets and commitments. However, although the SD report includes some data on carbon emissions, no single 'official' total has been made publicly available.

A summary of the latest data on the large but neglected carbon emissions of military activities has been made by Dr Stuart Parkinson of the UK Scientists for Global Responsibility (SGR) in: The Carbon Boot-print of the Military. He estimates that for the 2016/2017 period, the GHG emissions from MoD estates and capability amounted to approximately 3.2 million tonnes of CO2 - some 40% of which come from MoD estates and 60% from MoD Capability, equipment and military operations. These numbers indicate that the carbon boot print of the MOD is higher than the carbon emission of Iceland.

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- Figure 1:
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  Belcher, O., Bigger, P., Neimark, B., & Kennelly, C. (2019). *Hidden carbon costs of the "everywhere war": Logistics, geopolitical ecology, and the carbon boot-print of the US military.* Transactions of the Institute of British Geographers.

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