COP29 SIDE EVENT

TRANSPARENT MILITARY EMISSIONS REPORTING AND THE PATH TO MILITARY DECARBONISATION

18 Nov 2024 | 16:45-18:15 Baku / 12:45-14:15 GMT | SE Room 8 / Streamed online

Estimates suggest that militaries are responsible for 5.5% of global emissions but the sector is largely overlooked within the UNFCCC. This event will highlight progress in military emissions reporting, explore challenges to military decarbonisation and present a way forward for dealing with military emissions under the UNFCCC.

Speakers

Linsey Cottrell | Conflict and Environment Observatory
Colonel Robert Šipec | Ministry of Defence of the Republic of Slovenia
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Gabriela Manea | DCAF - Geneva Centre for Security Sector Governance
Thea Uhlich | Climate Change Performance Index

Conflict and Environment Observatory
REPUBLIC OF SLOVENIA MINISTRY OF DEFENCE
FFI Forsvarets forskningsinstitutt
DCAF Geneva Centre for Security Sector Governance
CCPI Climate Change Performance Index

Transparent military emissions reporting and the path to military decarbonisation

COP29 side event - 18th November 2024

Linsey Cottrell

Environmental Policy Officer - Conflict and Environment Observatory

Conflict and Environment Observatory

Conflict and Environment Observatory

CEOBS is a UK charity working to increase the protection of people and ecosystems from the impact of armed conflicts and military activities

www.ceobs.org

THE MILITARY EMISSIONS GAP www.militaryemissions.org

Conflict and Environment Observatory

Lancaster University

Durham University

*"There is no way to reach Net Zero **<u>without</u>** also including emissions from the military"*

NATO Secretary General Jens Stoltenberg, COP26 in 2021

Conflict and Environment Observatory

“The EU’s goal to become climate neutral by 2050 cannot be achieved without the engagement of the defence sector”

European Defence Agency Deputy Chief Executive, André Denk, April 2024

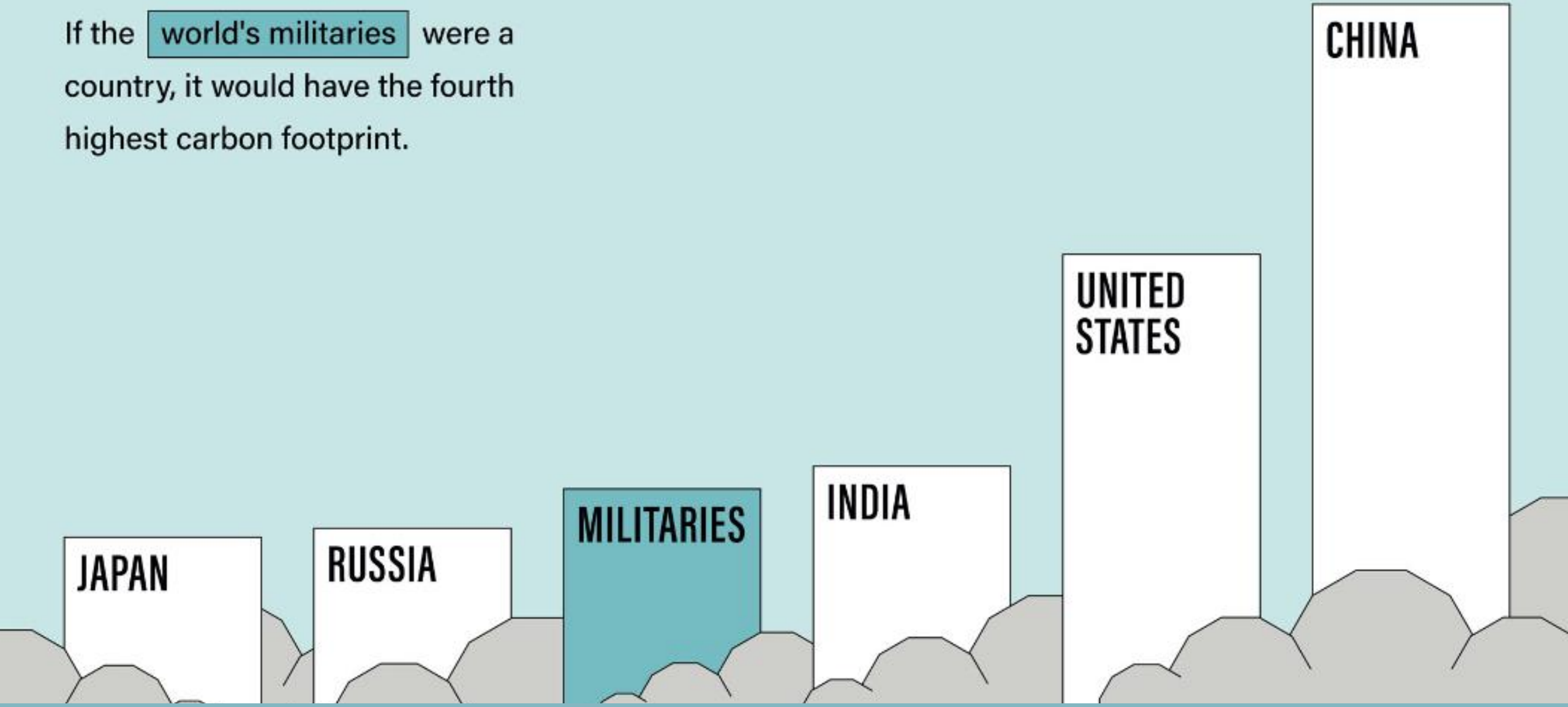
Conflict and Environment Observatory

- **Spending up – US$ 2.43 trillion in 2023**
- **Expenditure rise = GHG rise (0.9-2%)***
- **UNFCCC data submitted – voluntary**
- **Fuel use data only**
- **Annex 1 countries – few report in line with UNFCCC obligations**
- **Non Annex 1 countries included those with large military expenditure – e.g. China, India, Saudi Arabia, South Korea, Brazil, Israel**

Conflict and Environment Observatory

*Balázs Markó, B. (2024). https://arxiv.org/pdf/2408.16419

If the world's militaries were a country, it would have the fourth highest carbon footprint.



Conflict and Environment Observatory

www.militaryemissions.org

GHG emissions from military fuel and energy use:

SCOPES 1 2

GHG emissions from military supply chain and procurement:

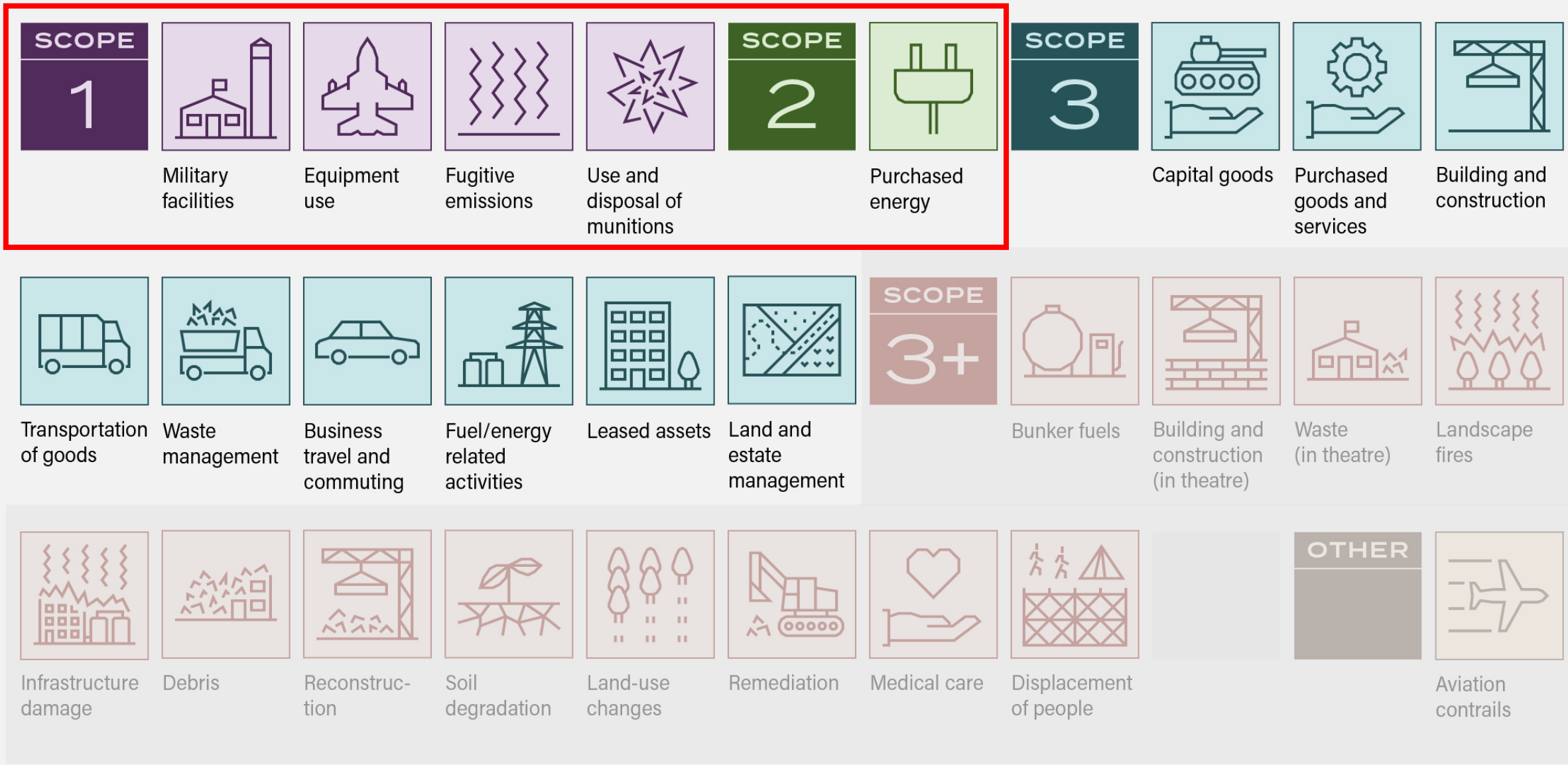
- Waste management
- Telecommunications
- Health and welfare
- Construction
- Logistics
- Facility management
- Military technology, equipment and munitions
- Private security
- Maintenance
- Catering
- Office supplies

SCOPE 3

Conflict and Environment Observatory

Proposed scopes of military greenhouse gas emissions

militaryemissions.org
@milemissionsgap



NATO Science & Technology Organisations (STO) activities

- **SAS-182** - The Effects of Climate Change on Security
- **SAS-184** **-** Carbon Footprint Assessment of Military Organizations …
- **AVT-397** - Sustainable Aviation Fuel (SAF) in military context
- **AVT-SP-011** - Exploring the Potential of Hydrogen as a Sustainable Jet Fuel
- **AVT-409** - Life Cycle Analysis of Sustainable Technology for Military Platforms
- **AVT-ET-243** - Critical Energetic Materials development of sustainability
- **AVT-ET-248** - Hydrogen as Fuel, Power Source & Infrastructure Challenges to NATO

https://www.sto.nato.int/Pages/activitieslisting.aspx

Conflict and Environment Observatory

Greenhouse gas reporting framework essentials

RELEVANT	COMPREHENSIVE	CONSISTENT	ACCURATE	TRANSPARENT
Relevant data and assessment methods are to be used.	All life cycle GHG emissions which provide a material contribution are to be included.	Use consistent data sources and methodologies to allow emissions comparisons.	GHG emissions quantification should be as robust as possible, with uncertainties minimised.	Information should be available on the methodology and data sources used and any relevant assumptions.

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In-country reporting

- Progress – more countries
- Need consistency
- National security ?
- Scopes 1, 2 and 3 (Scope 3+)

Conflict and Environment Observatory

Nationally Determined Contributions (NDCs)

- National action plans
- Key to achieving long-term goals
- New NDCs – 2025 deadline
- Successive NDCs need to be ambitious

NDC Registry.

Credit: Axel Fassio/CIFOR

Party	Title	Language	Translation	Version	Status	Submission Date	Additional documents
Switzerland	Switzerland First NDC (2021–2030 Update 2024 including ICTUs)	English		4	Active	14/11/2024	
Brazil	Brazil Second Nationally Determined Contribution	English			Active	13/11/2024	
United Arab Emirates	The United Arab Emirates' Third Nationally Determined Contribution (NDC 3.0)	English			Active	06/11/2024	
Panama	Panama Second NDC	Spanish		3	Active	13/06/2024	
Madagascar	NDC 2 Madagascar	French		N/A	Active	29/01/2024	

https://ceobs.org/national-climate-action-plans-must-include-military-emissions/

Conflict and Environment Observatory

To conclude….

- Transparency and improved reporting
- Mandatory reporting requirements to the UNFCCC
- Inclusion of military reduction commitments in NDCs
- Scrutiny of military climate mitigation strategies, and progress

Conflict and Environment Observatory

Thank you

Linsey Cottrell

Environmental Policy Officer - Conflict and Environment Observatory

www.militaryemissions.org

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REPUBLIKA SLOVENIJA
MINISTRSTVO ZA OBRAMBO

Transparent Military Emissions Reporting and the Path to Military Decarbonisation

by

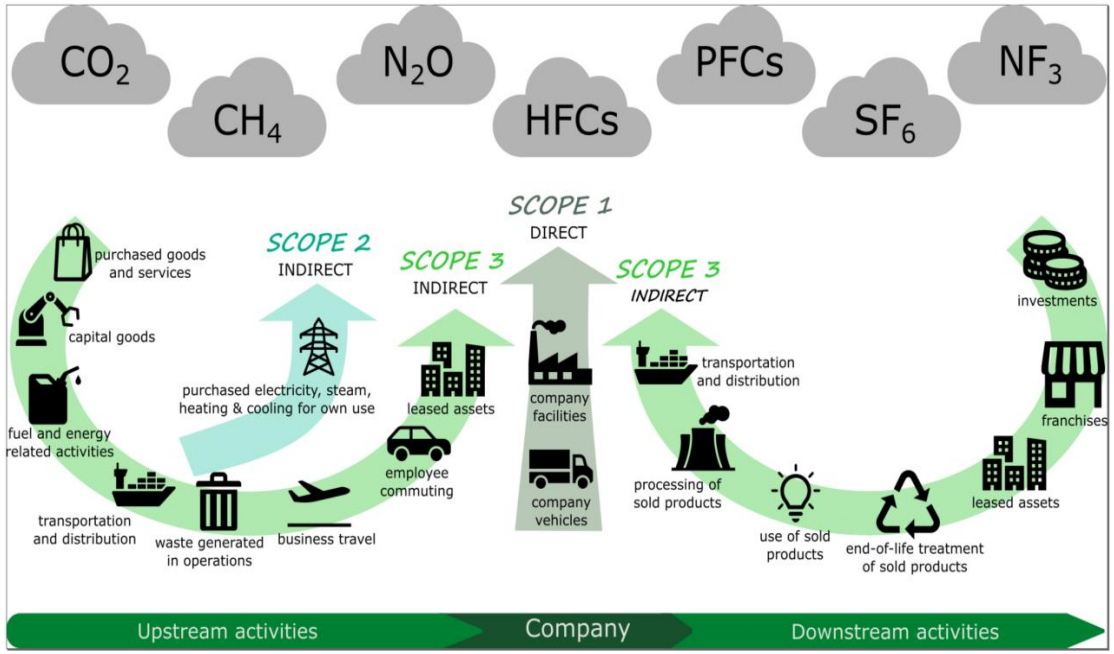
MoD Slovenia

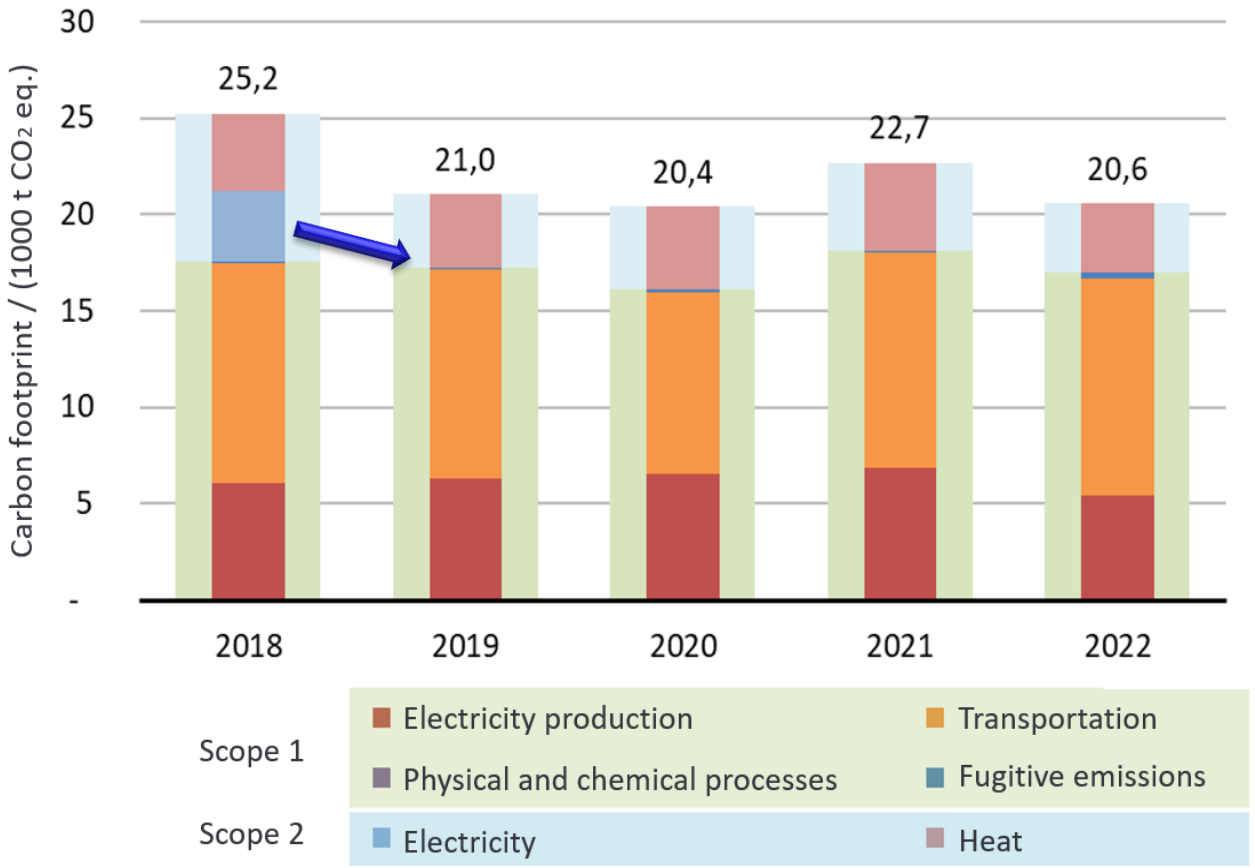
Colonel Robert Šipec

COP29
Baku
Azerbaijan

MoD and Armed Forces Emissions Calculation

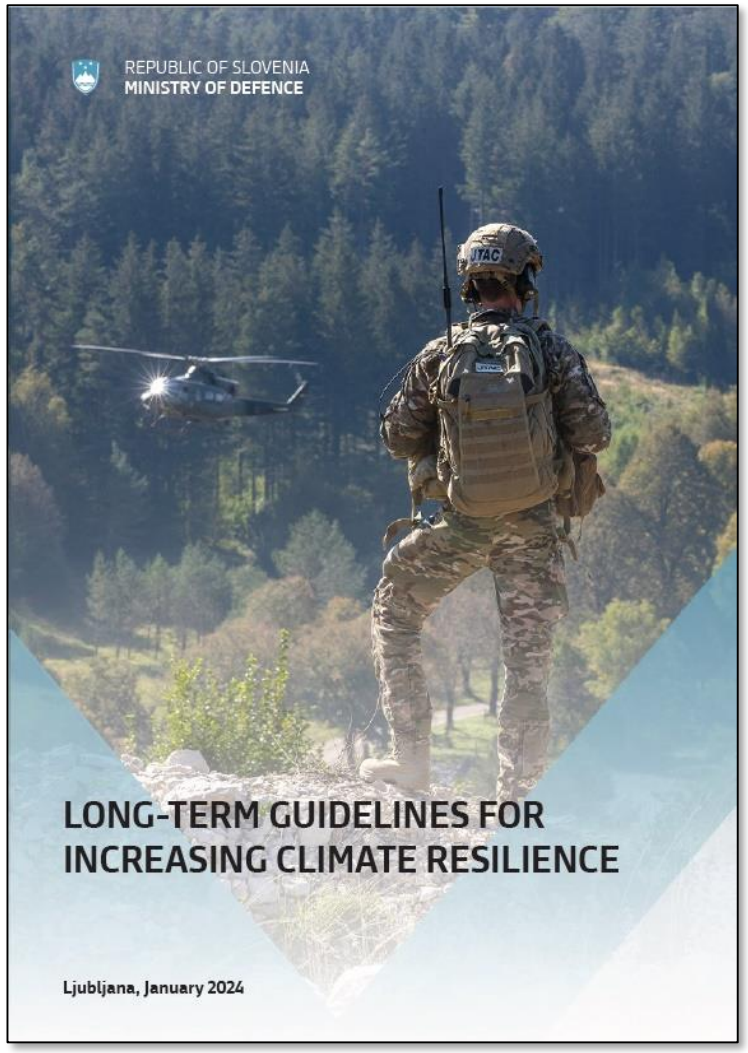
- GHG Protocol and
- ISO 14064-1:2019
- Scope 1, Scope 2, Scope 3





COP29 Baku Azerbaijan

Transparent Emissions Reporting in Support of Capability Building



Strategy -> Action Plan

- advanced modernization of infrastructure
- introduction of renewable sources
- transition to alternative fuels
- making transportation sustainable
- strengthening R&D activities

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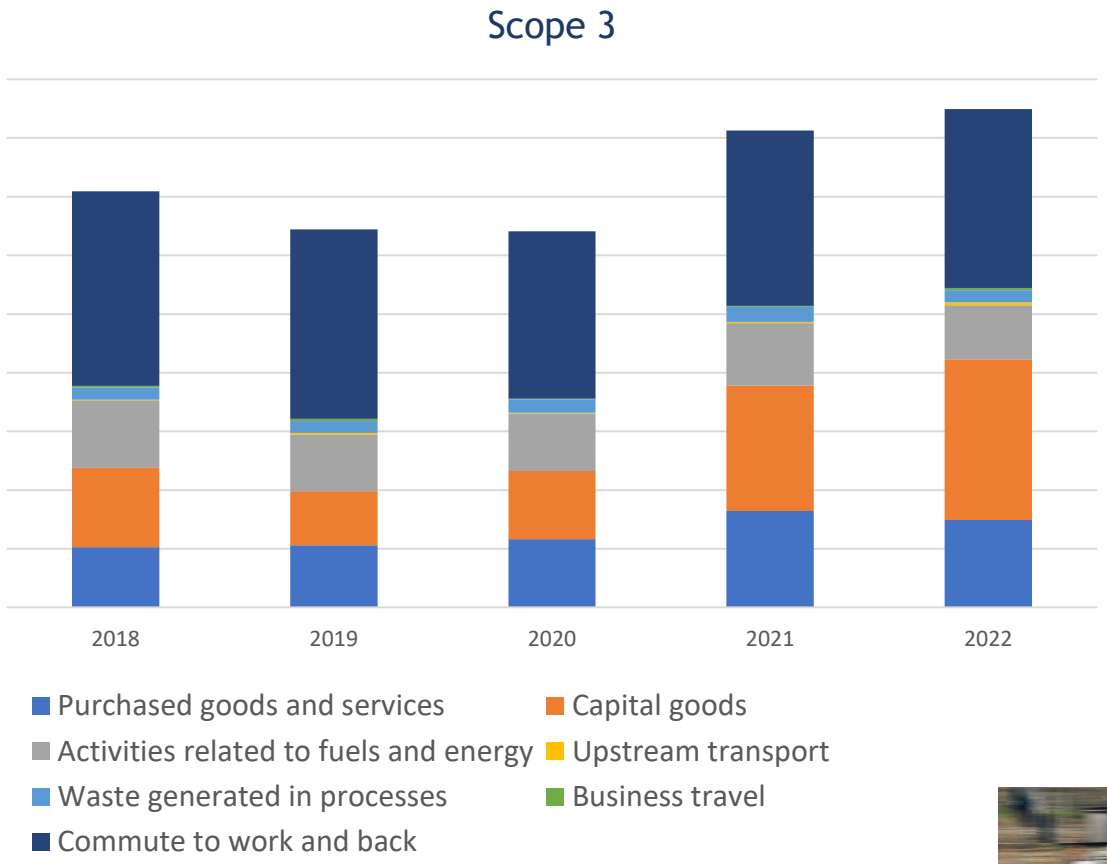
National and International Cooperation is the Key to Decarbonisation

Si EnE | Slovenian Energy and Environment Partnership in Defence

COP29 Baku Azerbaijan

Challenges – Scope 3 – Capital Goods



Uncertainty of Data and Emission

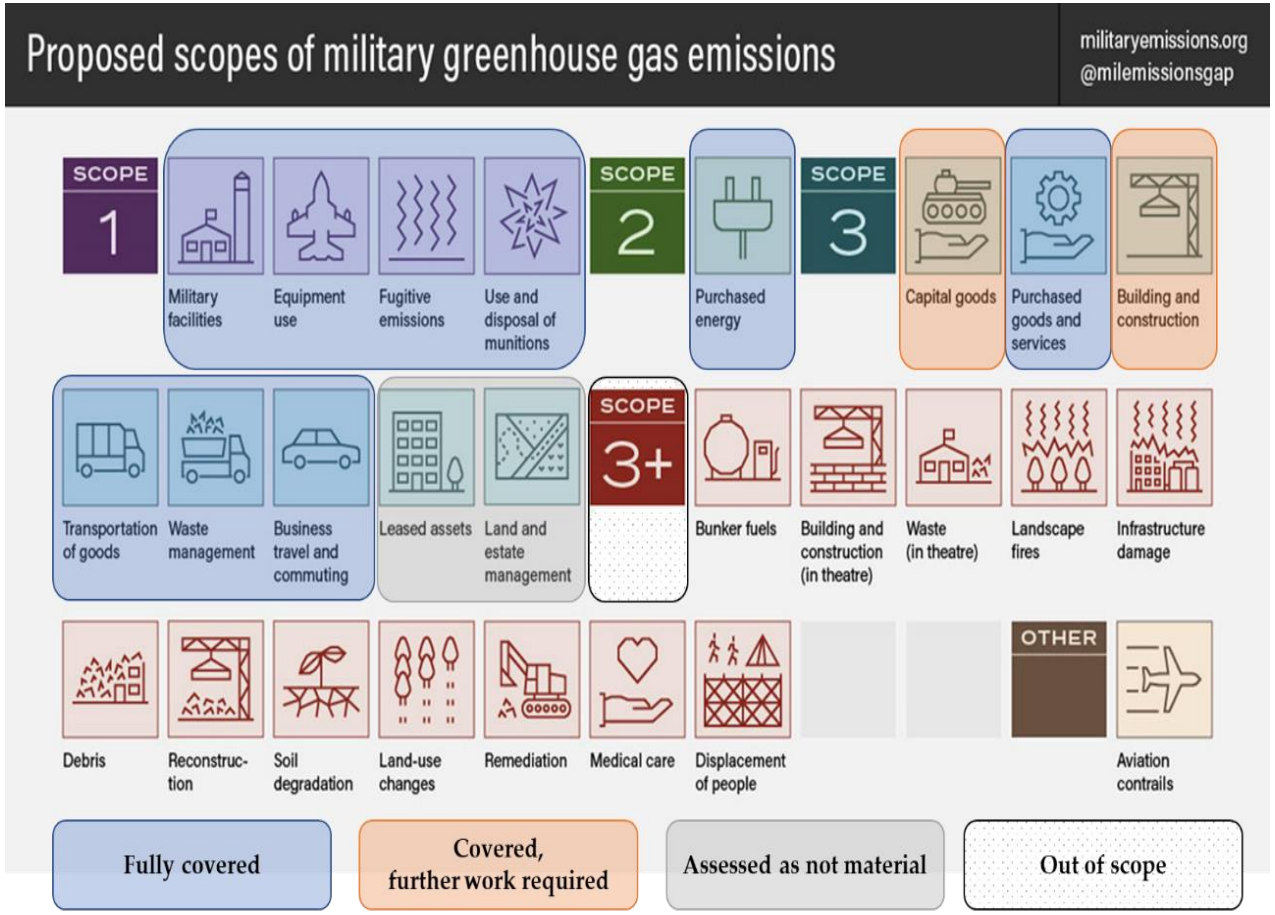
Category	Data of Activities	Emission factor
Scope 1	**1**	**1**
Electricity and heat production	1	1
Physical and chemical processes	1	1
Transport	1	1
Fugitive emissions	1	1
Scope 2	**1**	**1**
Electricity	1	1
Heat	1	1
Scope 3	**2**	**2**
Goods and services purchased	3	3
Capital goods	3	3
Fuel and energy related activities	2	2
Upstream transport and distribution	1	2
Waste	1	1
Business travel	1	2
Employee commuting	2	2

FS UNIVERZA V LJUBLJANI
Fakulteta za strojništvo

COP29 Baku Azerbaijan

In Conclusion

- data and **emission factors** are generally **available** for scopes 1 and 2
- the resulting emission calculations are used to plan **decarbonization activities**
- activities **improve** military **capabilities** in most cases
- **international cooperation** boosts military transition
- there is a needed to improve the availability and accuracy of data in **scope 3**
- **further work** should focus on the development of sector-specific emission factors.



(source: CEOBS)

COP29
Baku
Azerbaijan

Thank you for your attention.

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FFI Norwegian Defence Research Establishment

Greenhouse gas inventory of the Norwegian defense sector

Simen Kirkhorn
18.11.2024

Foto: AdobeStock

Introduction

Inventory

Forecasting

Action plan

The defence sectors environmental database (MDB)

Energy use in buildings

Use of ammunition

Water use

Spills and contamination

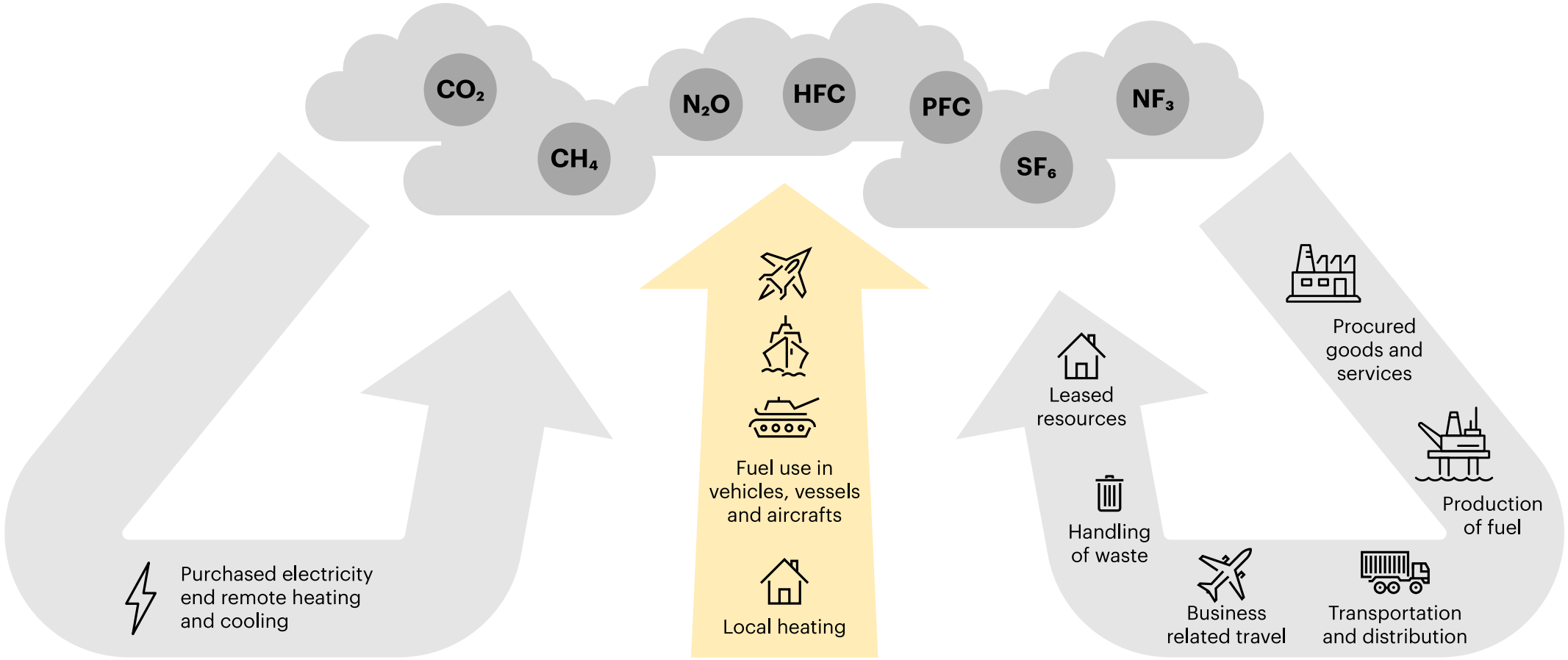
Fuel use

Waste

Hazardous chemicals

Greenhouse gas inventory

Greenhouse gas inventory

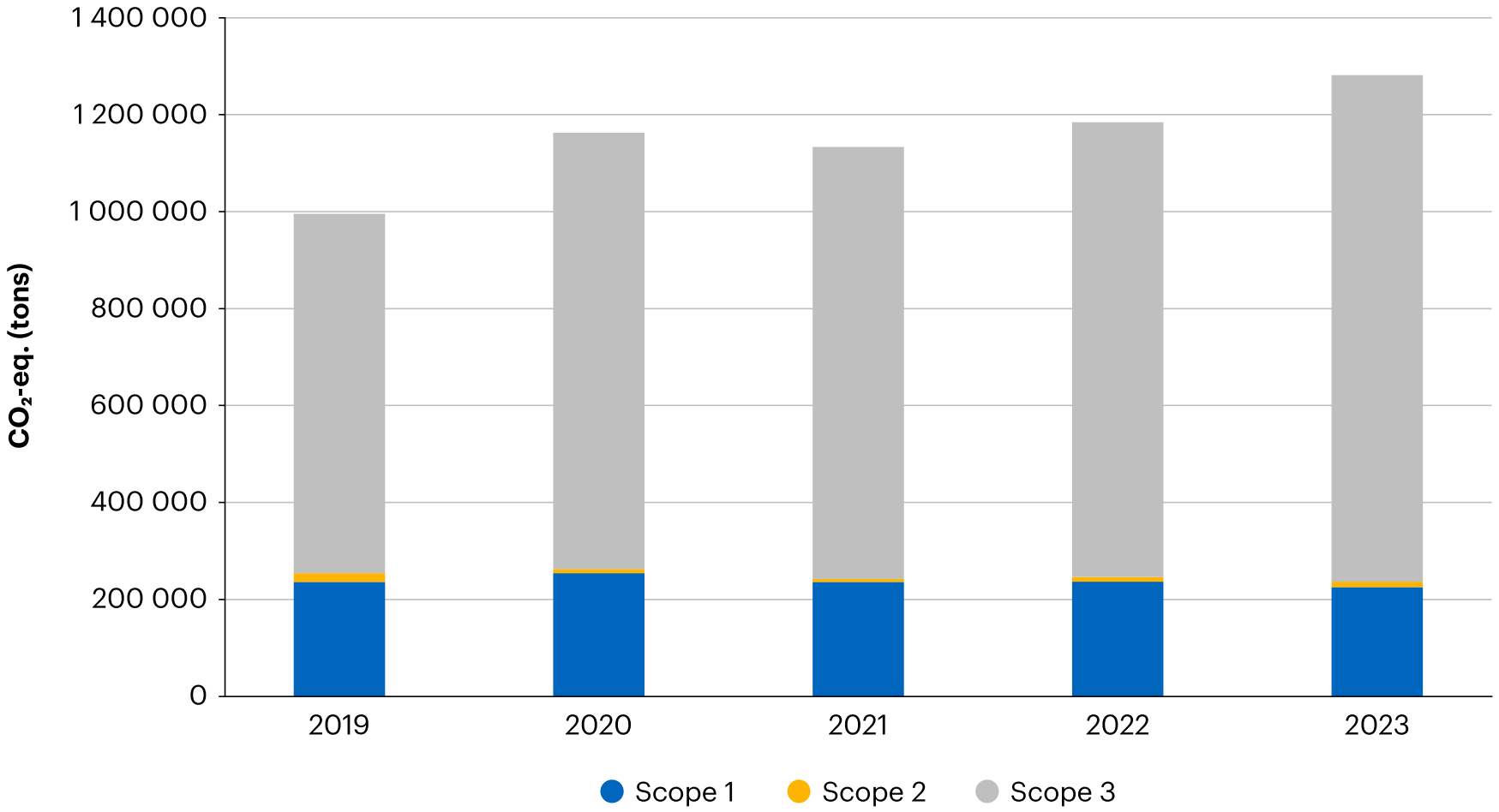


Scope 2
Indirect emissions

Scope 1
Direct emissions

Scope 3
Indirect emissions

Greenhouse gas inventory, scope 1–3



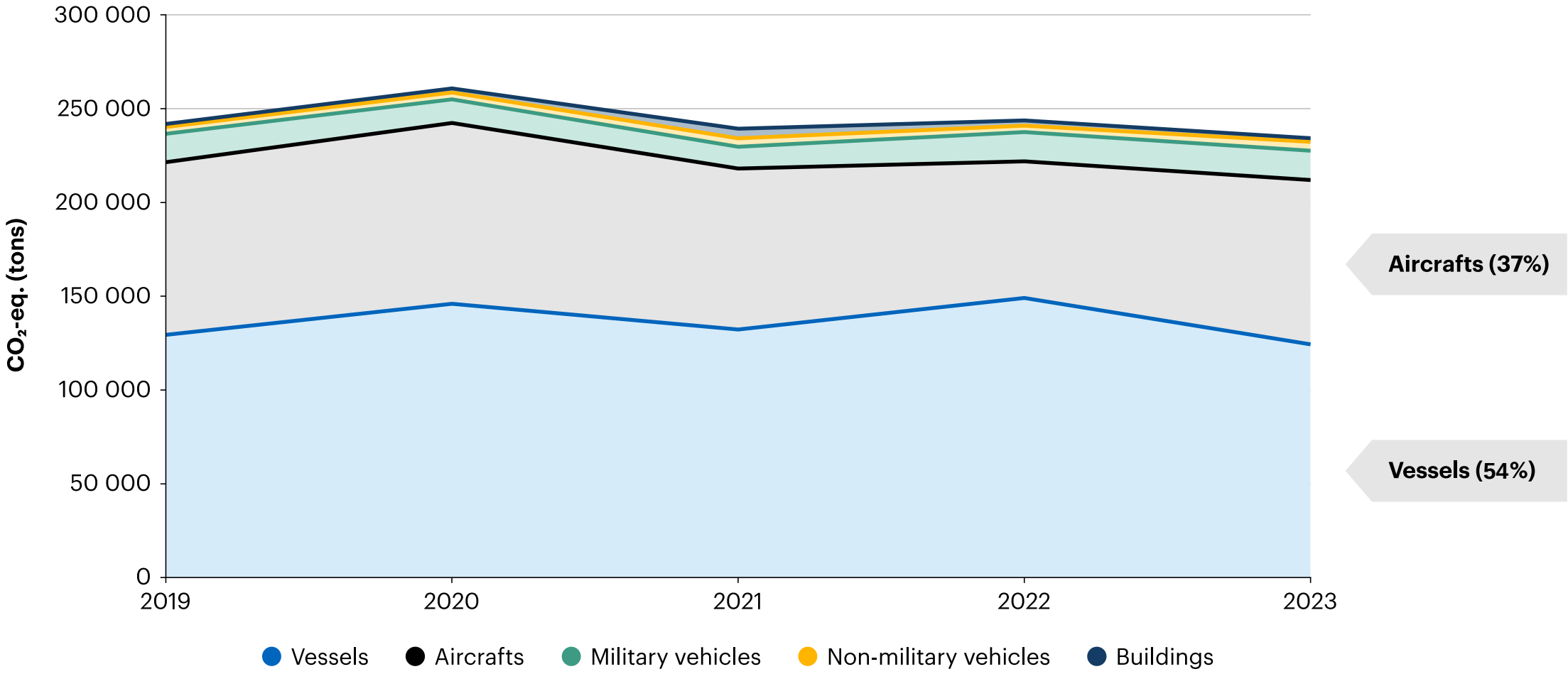
Total (scope 1–3)
~1.3 million tons

Scope 3: 1 045 300 (81%)

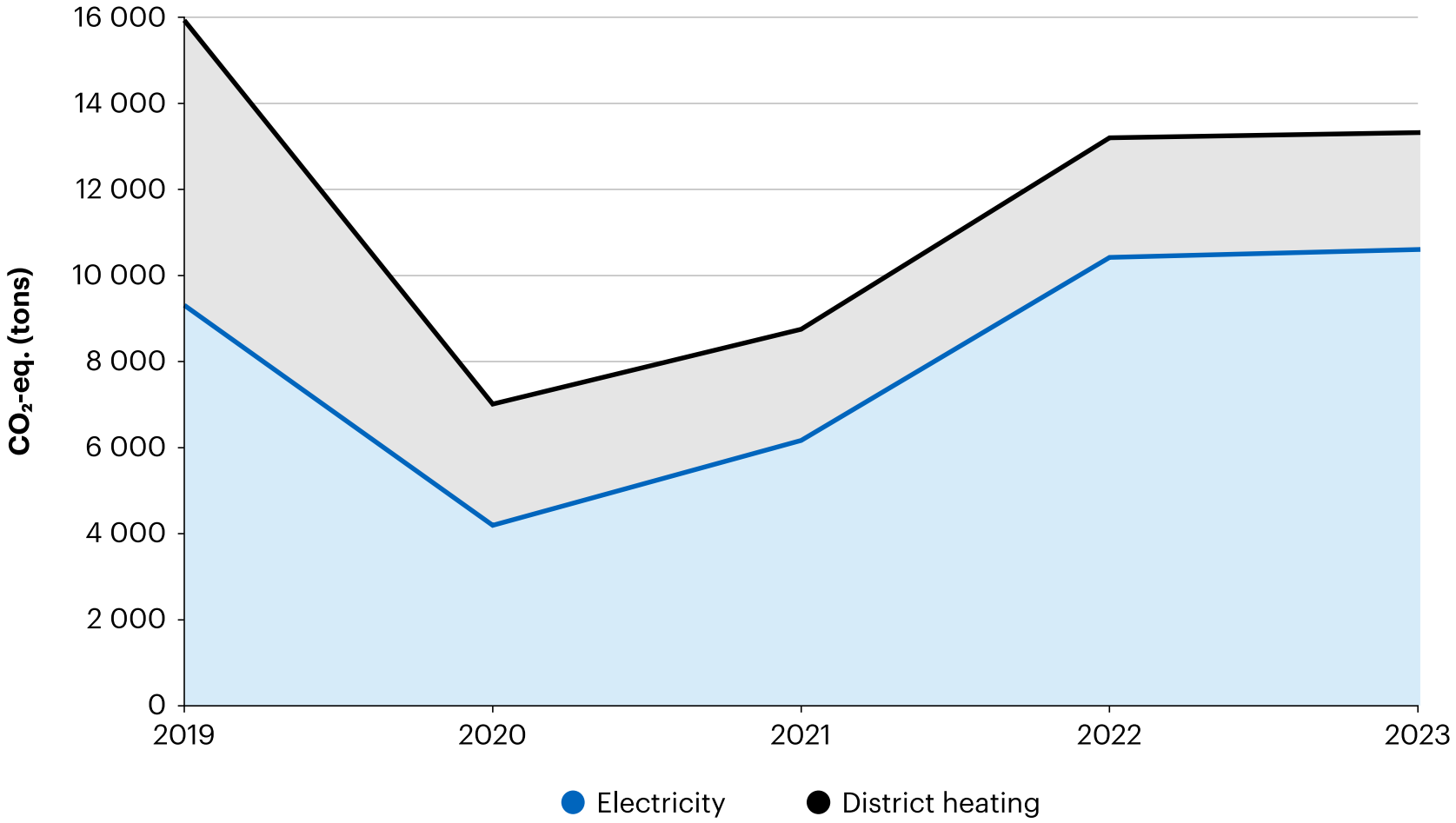
Scope 2: 13 300 (1%)

Scope 1: 234 500 (18%)

Scope 1


300 000
250 000
200 000
150 000
100 000
50 000
0
CO_2-eq. (tons)
2019
2020
2021
2022
2023
Aircrafts (37%)
Vessels (54%)
Vessels
Aircrafts
Military vehicles
Non-military vehicles
Buildings

Scope 2



Market based electric mix

Emission factor:
405 g CO_2/kWh

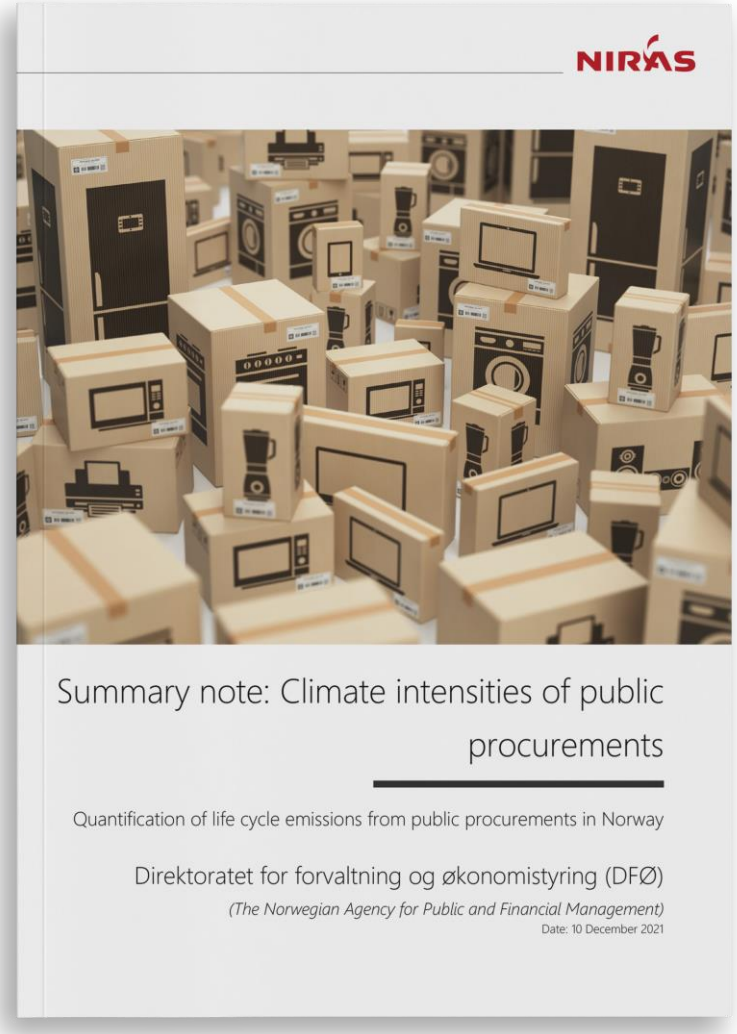
Emissions:
286 600 tons CO_2-eq.

Physical electric mix

Emission factor:
19 g CO_2/kWh

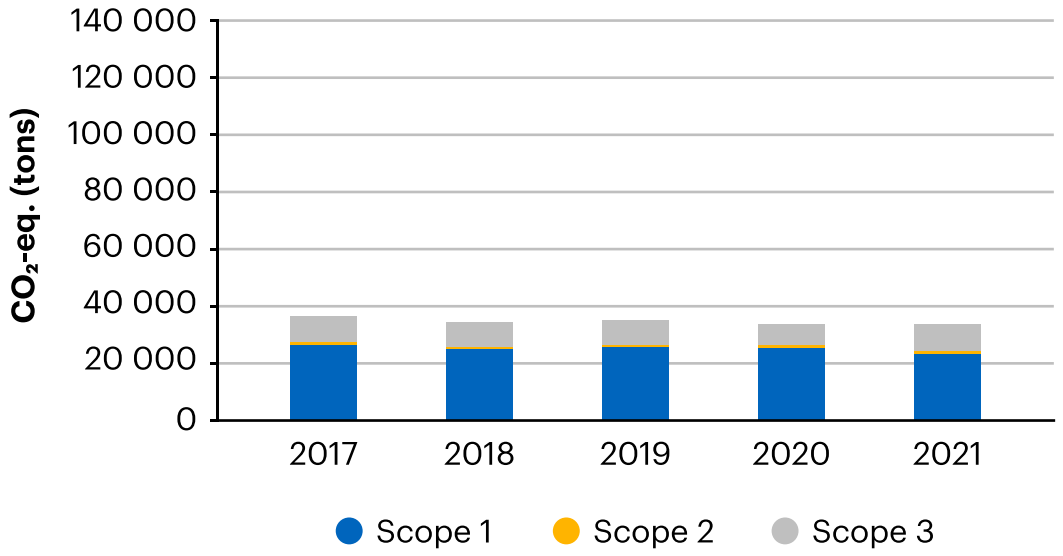
Emissions:
13 300 tons CO_2-eq.

Economic model for scope 3 emissions



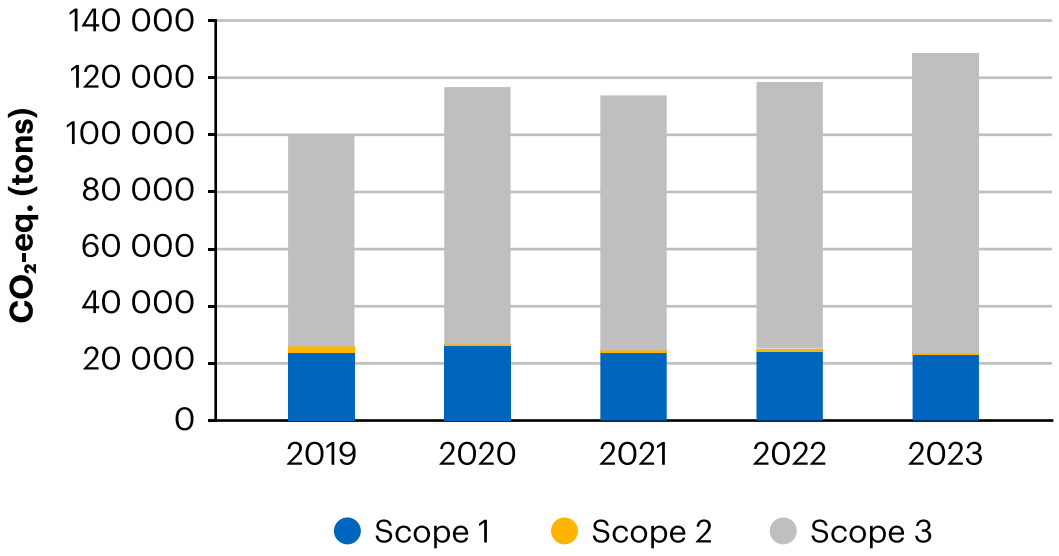
Greenhouse gas inventory for 2021 vs. 2023

2021



Low accuracy
High precision

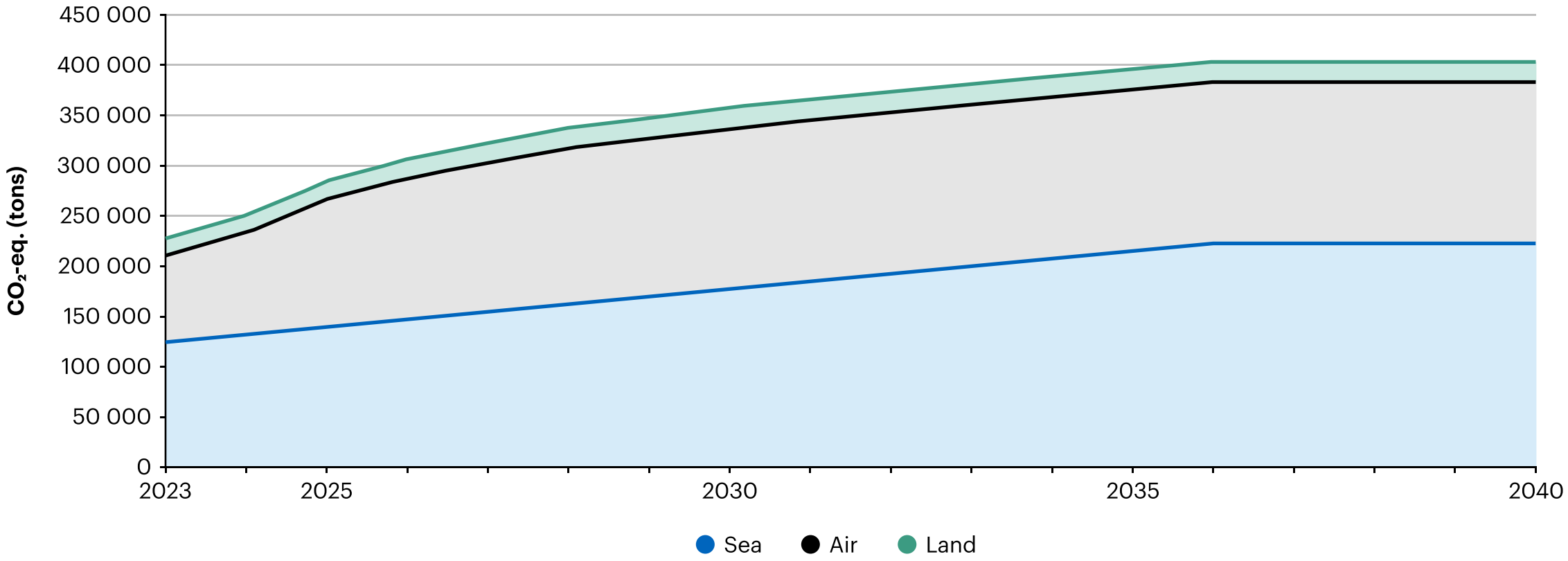
2023



High accuracy
Low precision

Emissions forecasting

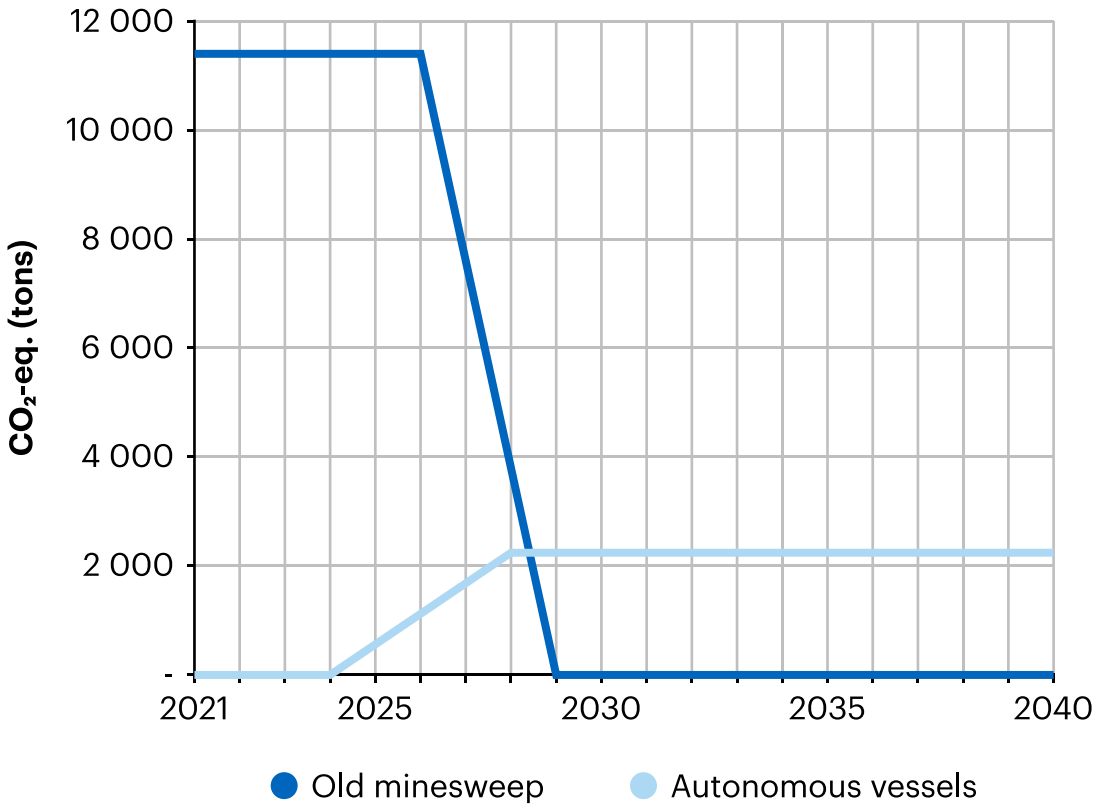
Future emissions, preliminary calculation



Insights from emission forecasting

Photo: Norwegian Defence Research Establishment (FFI)

Maritime de-mining operations

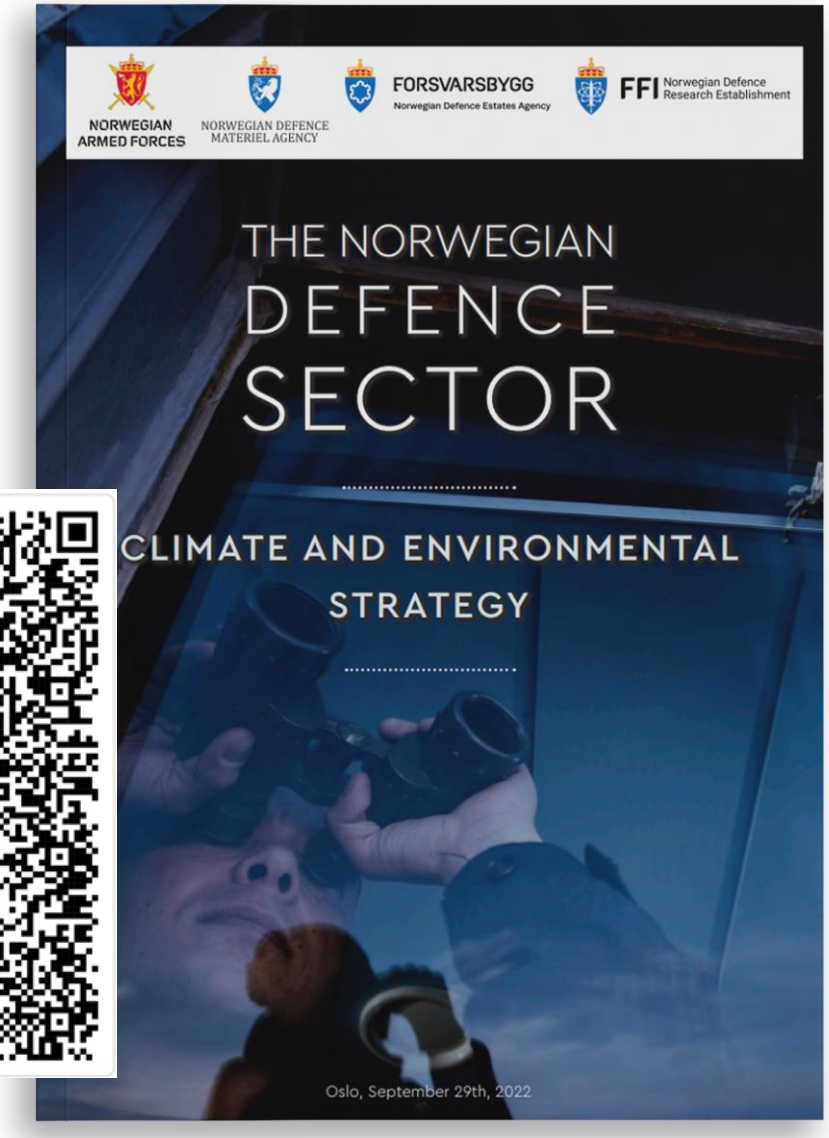


Action plan and future work

Take home:

- Long experience with greenhouse gas inventory
- Emission forecasting and mitigation modelling

Scan QR code to read



FFI
Norwegian Defence
Research Establishment

FFI turns knowledge and ideas into an effective defence

Contact: Simen-Arne.Kirkhorn@ffi.no

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COP29 Side Event

Transparent Military Emissions Reporting and the Path to Military Decarbonization

Call for Climate Action in the Security Sector Governance and Reform(SSG/R): for better serving in the storm

DCAF – Policy and Research Division (PRDiv.)

Dr. Gabriela Manea

DCAF Geneva Centre for Security Sector Governance

Objectives:

- Raise awareness about both impacts and possible contributions of the security sector – especially, of the military – in global and national climate governance;
- Advocate for urgent action to mainstream climate in Security Sector Governance and Reform (SSG/R): Mitigate, Adapt, Respond and Cooperate (MARC);
- Share examples of what they need to do differently in the future to better serve in the storm;
- Call for the establishment of a global «green-SSR» fund to support this transformation process, especially in developing, transition and conflict-affected contexts

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Climate Action and the Security Sector: Need a “Middle Ground”

Security Sector Governance and Reform (SSG/R) as «Middle Ground», immunizing the security sector against the risks of «securitization»/ «militarization» of climate and advocating for:

1. Accountability and effectiveness

2. Prepardness and strategic planning

3. Transparent targets for mitigation and adaptation

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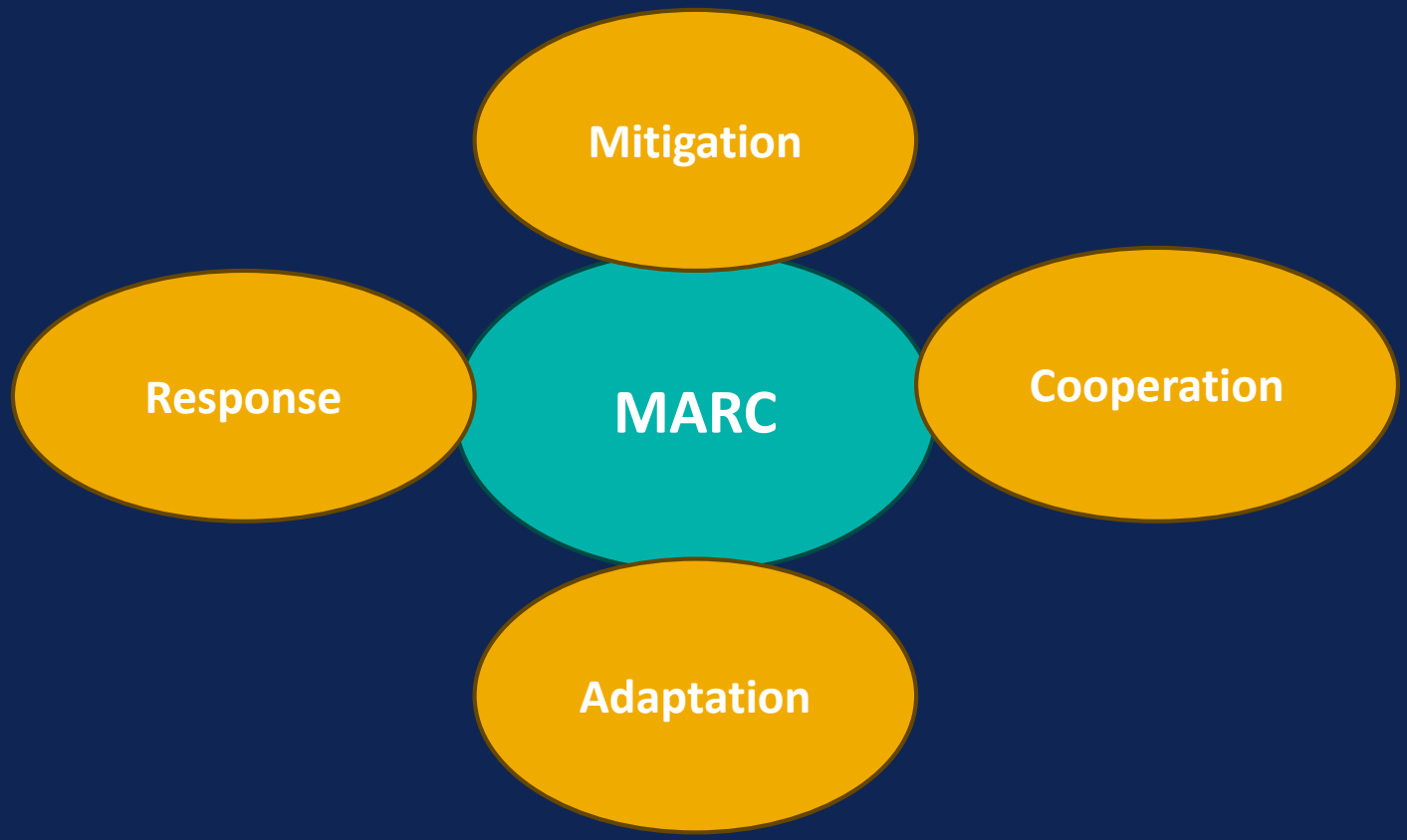
SSG/R Framework for Climate Action in the Security Sector: MARC under UNFCCC & Paris Agreement/COPs



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Lessons for the Security Sector along MARC: ***Mitigation (1)***

- 5.5% of global GhG by defence forces (2022)
  - size of a country`s military
  - defence spending
  - size of the military technology industry
  - involvement in armed conflicts
- trainings, wargames, weapon testing and waste, including nuclear.
- environmental conservation
- prevention of environmental and climate-related crime;
- examples of police striving for carbon neutrality and zero GhG emissions

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Lessons for the Security Sector along MARC: ***Mitigation (2)***

- Militaries do far less– 2021, call by 225 organizations on governments:
  - absent from Nationally Determined Contributions (NDCs) & National Adaptation Plans (NAPs)
  - reporting is voluntary;
  - reported data is of low-quality, selective and highly inconsistent

- Armed conflicts` share on GhG emissions – not accounted for in the current global reporting system

- Security oversight institutions-largely absent from climate mitigation initiatives in the security sector

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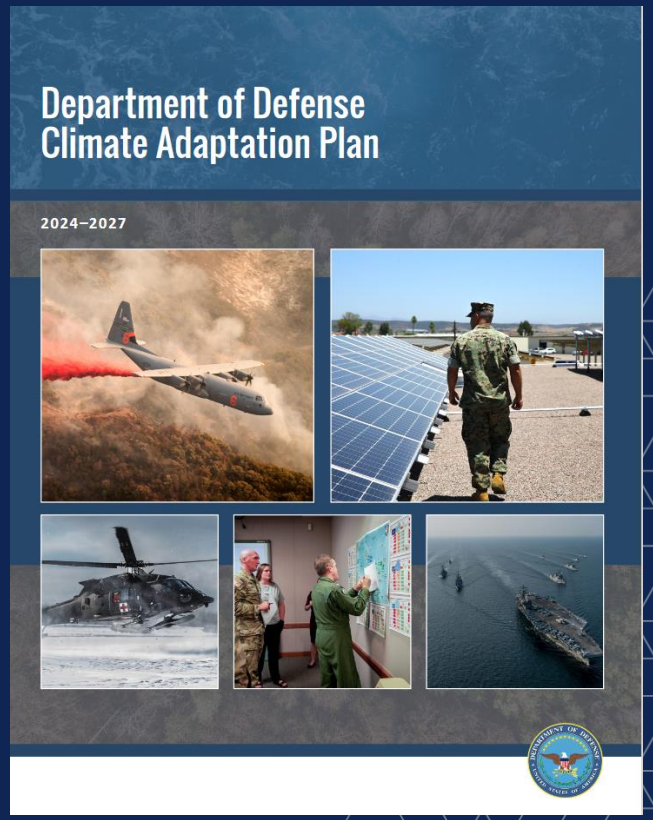
Lessons for the Security Sector along MARC: ***Adaptation***

- Operating environment and the nature of missions and activities.
- Need to adapt their services and the way they provide security to serve those affected.
- Adaptation solutions are context-bound.
- Adaptation is a multi-layered
- Impact assessment, available resources and political will.
- Oversight institutions -weak involvement in adaptation strategies of security sectors.



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Lessons for the Security Sector along MARC: ***Response (1)***

- First responders to many climate-related crises and challenges:
  - Natural and human-made disasters (fight fires, floods, protect infrastructure; humanitarian emergencies)
  - Climate-related insecurity, violence and conflict (policing tasks)
  - Climate-related criminality, especially environmental crime
- Enhanced collaboration
- Risk of overstretch of operational capacity

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Lessons for the Security Sector along MARC (3): ***Response (2)***

- Role of good governance is essential
- Green SSG/R, solution to climate crisis, and peace and security.
- Gender-sensitive security sector`s responses

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Lessons for the Security Sector along MARC: ***Cooperation***

- National and international cooperation among security sectors in the UNFCCC/Paris Agreement Frameworks.
- Cross-sectoral ollaboration and other national and subnational authorities, and civil society.
- Standards and best practices for a climate-sensitive SSR
- Standards and best practices of «green transition».
- Financial mechanisms for green SSG/R within the Green Climate Fund and/or climate-related official development assistance (ODA).
- Expand international cooperation on DRR-related activities.

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Options for Action – Mitigation (1)

- No time to wait – national authorities must urgently «MARC» climate change with commensurate climate-related action on SSR, or «green SSR»
  - Run assessments to determine priorities for security sector mitigation;
  - Review and enact new laws that hold security institutions accountable for national climate mitigation strategies, goals, and plans;
  - Capacity-building of security oversight institutions – formal and informal ones – to ensure accountability, compliance, and consistancy;
  - Reduce environmental footprint, inlcuding GHG emissions, and impact on climate warming, including throug carbon-neutral technology;
  - Cooperate closely with research institutions and pistemic communities in this sense;

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Options for Action: Mitigation (2)

- Rethink military training, weapon testing and ammunition storage to reduce their environmentally damaging impact;
- Prioritize the protection of natural ressources, biodiversity andcarbon sinks, on land, sea and in the the air;
- Account for the security sector`s contributions to NDCs and NAPs
- Improve existing international reporting mechanisms on GHG emissions for universal, systematic and reliable date collection and reporting.
- Develop mandatory national frameworks to estimate and monitor the climate and environmental footprint of the security sector, inlcuding of armed conflictss and post-war reconstruction programmes.

DCAF Geneva Centre for Security Sector Governance

COP29 Side Event

Transparent Military Emissions Reporting and the Path to Military Decarbonization

DCAF thanks you for joining us!

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Climate Change Performance Index

Thea Uhlich
Policy Advisor for Low-Carbon Strategies and Energy
uhlich@germanwatch.org

GERMANWATCH

Results CCPI 2024

Rank	Country
1.*	–
2.	–
3.	–
4.	Denmark
5.	Netherlands
6.	United Kingdo
7.	Philippines
8.	Morocco
9.	Norway
10.	India
11.	Sweden
12.	Chile
13.	Luxembourg
14.	Estonia
15.	Portugal
16.	Germany
17.	European Unio
18.	Lithuania
19.	Spain
20.	Egypt
21.	Vietnam
22.	Greece
23.	Austria

Rank	Country
24.	Thailand
25.	France
42.	Indonesia
43.	Italy
44.	Cyprus
45.	Hungary
46.	Slovakia

Rank	Country
47.	Poland
48.	Malaysia
49.	Czech Republic
	Bulgaria
	Algeria
	Australia
	Türkiye
	Uzbekistan
	China
	Belarus
	United States
	Japan
	Argentina
	Chinese Taipei
	Kazakhstan
	Canada
	Republic of Korea
	Russian Federation
65.	United Arab Emirates
66.	Saudi Arabia
67.	Islamic Republic of Iran

CCPI 2025

Nov 20th | 9am AZT

@COP29 (Natavan, Area D)

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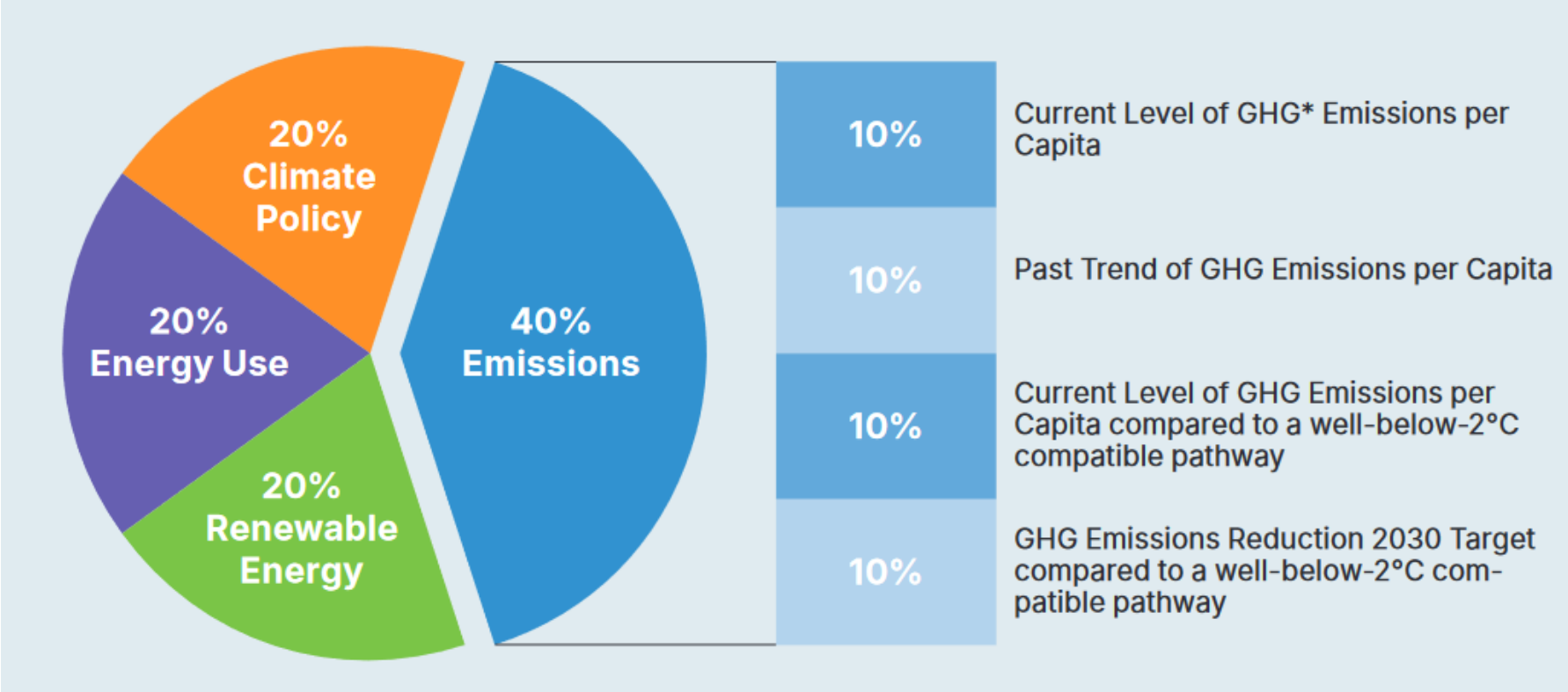
* None of the countries achieved positions one to three. No country is doing enough to prevent dangerous climate change.
The labelled countries are the biggest producers of oil, gas, and coal worldwide.

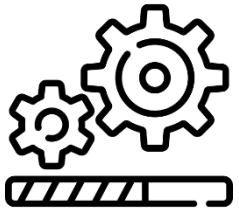
GERMANWATCH

CCPI methodology

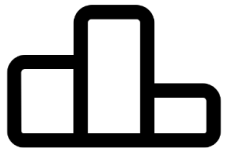


Military Emission Gap X CCPI

Effective climate targets



Tracking Progress



Underestimation of emissions

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CCPI methodology

Global Military expenditure rank	Country	CCPI 2024	Data accessibility score
1	United States	Very Low (57)	Poor
2	China	Low (51)	Poor
3	Russian Federation	Very Low (63)	Poor
4	India	High (7)	Very poor
5	Saudi Arabia	Very Low (67)	Very poor
6	United Kingdom	Medium (20)	Poor
7	Germany	High (14)	Fair
8	France	Low (37)	Poor
9	Korea, South	Very Low (64)	Poor
10	Japan	Very Low (58)	Very Poor

Conclusion

- Military Emission gap affects the CCPI!

- Accurate data bases are…

  … important to set accurate targets and implement meaningful measures
  … vital to track progress

COP29 SIDE EVENT

TRANSPARENT MILITARY EMISSIONS REPORTING AND THE PATH TO MILITARY DECARBONISATION

18 Nov 2024 | 16:45-18:15 Baku / 12:45-14:15 GMT | SE Room 8 / Streamed online

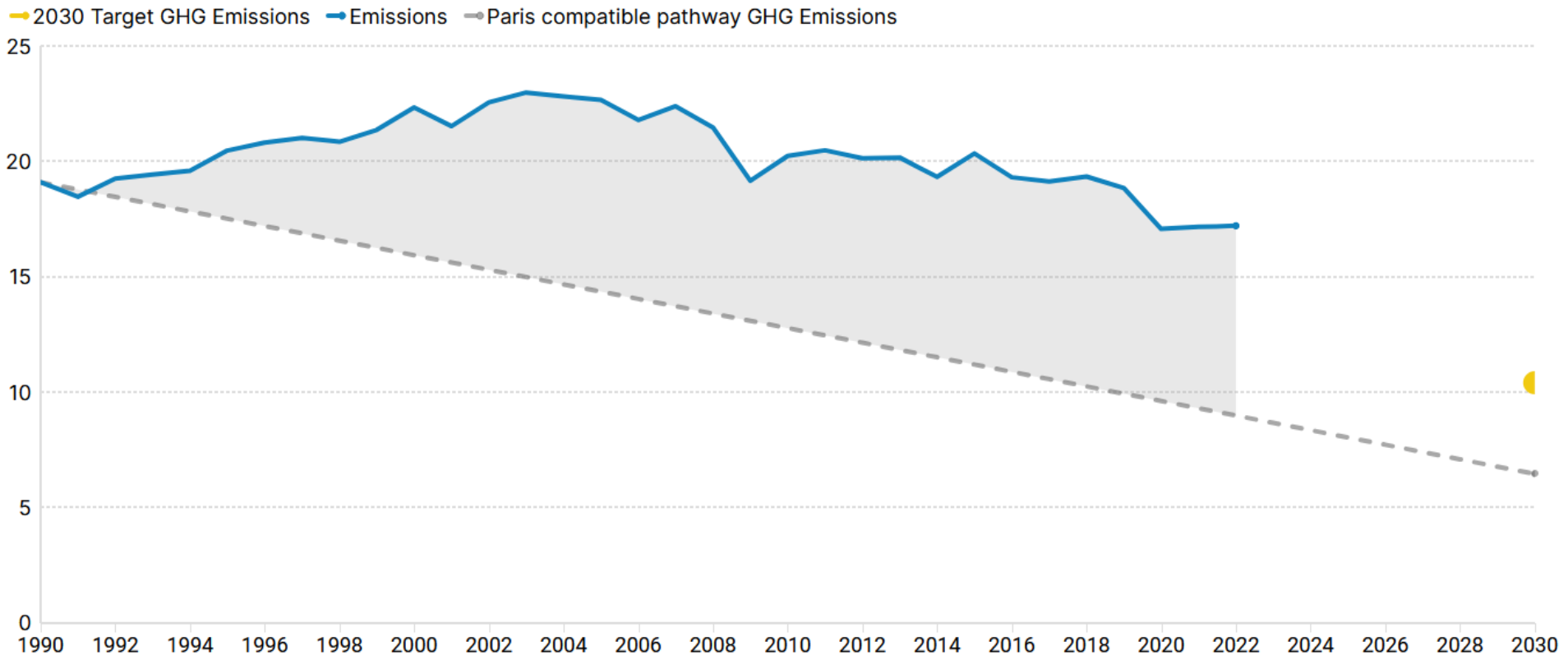
Estimates suggest that militaries are responsible for 5.5% of global emissions but the sector is largely overlooked within the UNFCCC. This event will highlight progress in military emissions reporting, explore challenges to military decarbonisation and present a way forward for dealing with military emissions under the UNFCCC.

Speakers

Linsey Cottrell | Conflict and Environment Observatory
Colonel Robert Šipec | Ministry of Defence of the Republic of Slovenia
Simen Kirkhorn | Norwegian Defence Research Establishment
Gabriela Manea | DCAF - Geneva Centre for Security Sector Governance
Thea Uhlich | Climate Change Performance Index

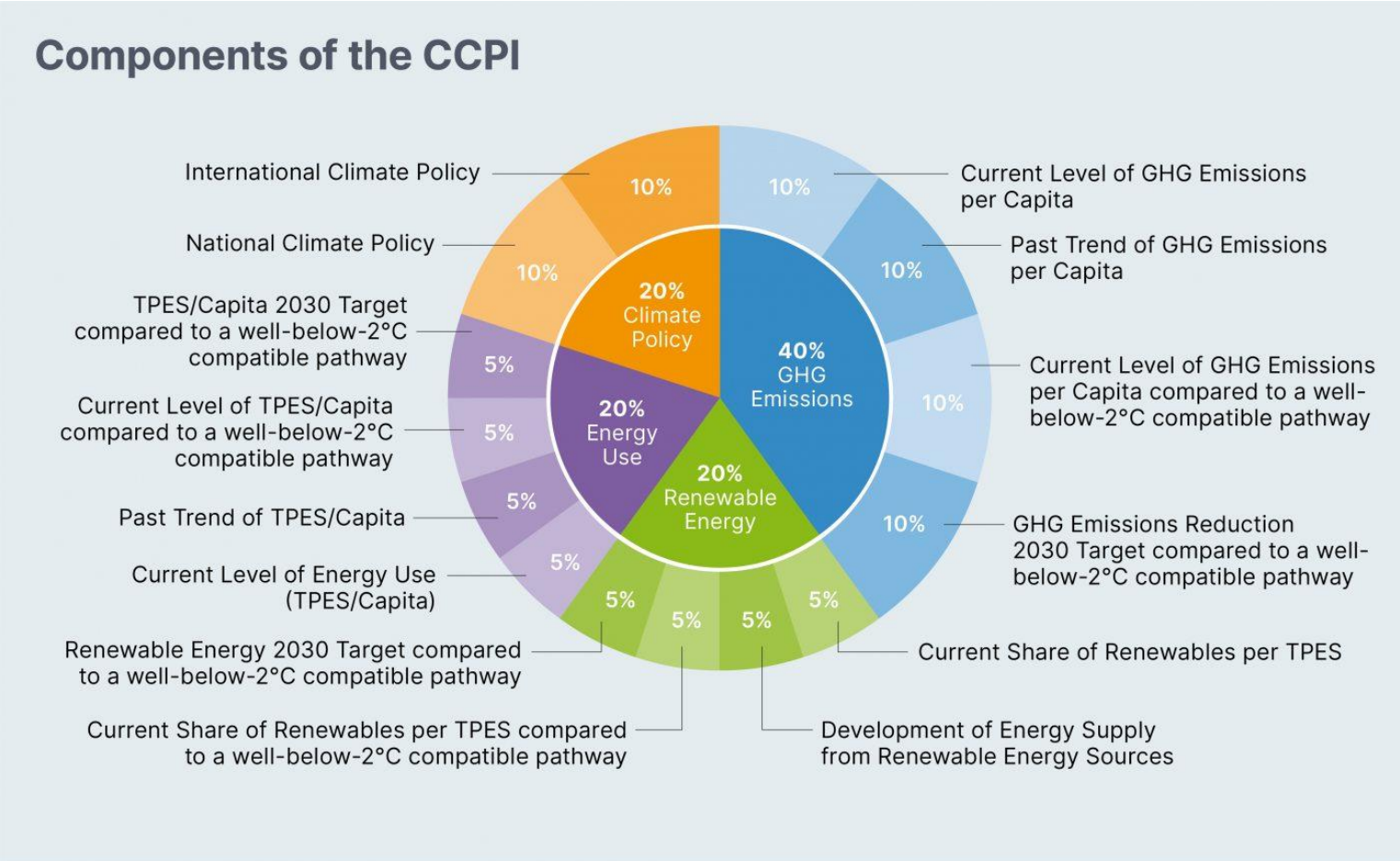
Conflict and Environment Observatory
REPUBLIC OF SLOVENIA MINISTRY OF DEFENCE
FFI Forsvarets forskningsinstitutt
DCAF Geneva Centre for Security Sector Governance
CCPI Climate Change Performance Index

Paris-compatible pathways | Canada



GERMANWATCH

CCPI methodology



GHG = Greenhouse Gases | TPES = Total Primary Energy Supply

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