# "Framing of new energy policies and models arising from the ongoing Programmes, Activities and Studies e.g.(EU, NATO, EDA, EEAS, NATO , etc.), as contributors to the Energy Strategy Agenda to be developed" and it is preceded by "Energy Geopolitics and Spheres of Influence (Threats/Challenges/Priorities/Initiatives)"

Climate change, energy independence, energy security, energy efficiency, GHG reduction, carbon neutral

Introduction :

1) Preliminary Statement:

The Intergovernmental Panel on Climate Change (IPCC) has presented some new insights on climate impacts, vulnerability and adaptation that shows that the extent and magnitude of climate change impacts are larger than estimated in previous assessments. Our world is warming and dangerous and extreme climatic events are increasingly impacting nature and people's lives all around the world. Since the Fifth IPCC Assessment Report 2014, a wider range of impacts can be attributed to climate change. Globally, climate change impacts are causing illness, disrupting food webs, threatening physical and mental health and well-being, and even causing deaths and these impacts are only expected to intensify with additional warming. The interaction with multiple other societal and environmental challenges like a growing world population, unsustainable consumption, a rapidly increasing number of people living in cities, significant inequality, continuing poverty, land degradation, biodiversity loss due to land-use change, ocean pollution, overfishing and habitat destruction as well as a global pandemic only aggravates its consequences and impacts.
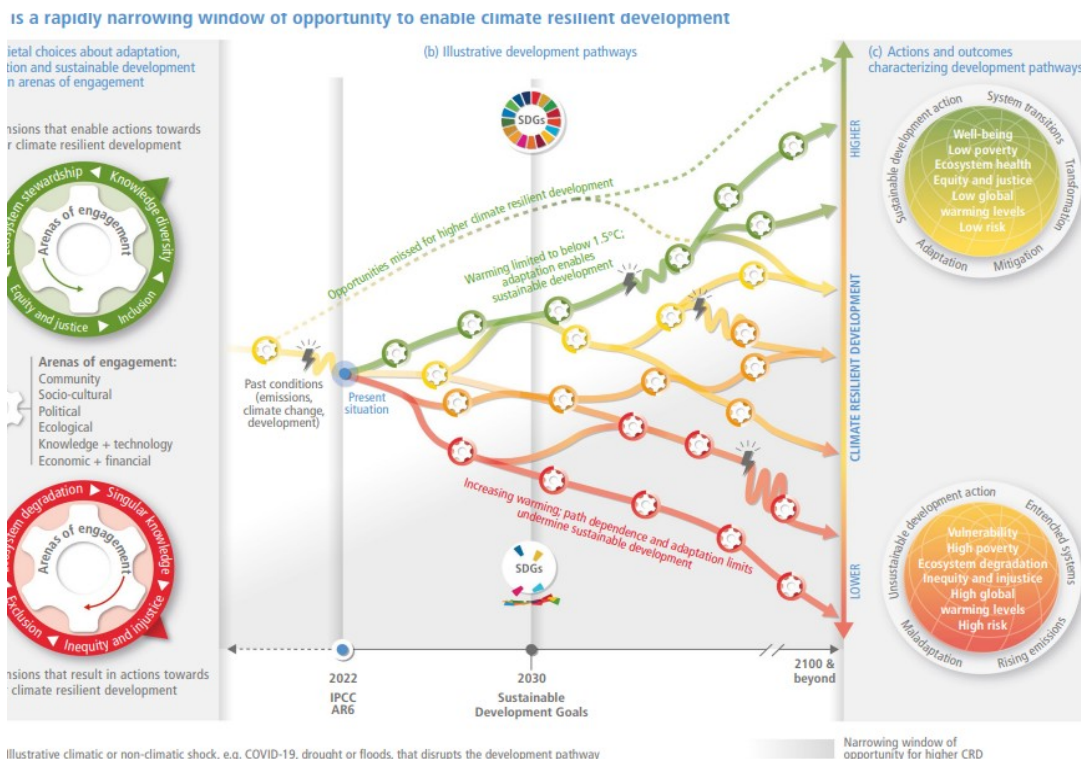
2) How does this affect the Security and Defence sector?

With climate change poised to further intensify resource competition, exacerbate conflicts and drive hundreds of millions of people from their homes, what was previously considered separately from matters of peace and security, must now take center stage in the Security and Defence sector.

Climate change has been acknowledged as a threat multiplier that dramatically alters the environments in which militaries will have to operate in the coming decades:

> - From higher frequency and intensity of storms and extreme weather events, through greater temperature extremes, sea-level rise, rapid changes in precipitation patterns, to exposure to new diseases such as malaria or dengue, to reduced supplies of drinking water, Climate change will have implications for the Defence sector at tactical and operational levels. All these aspects test the resilience of our military installations and critical infrastructures, impair the effectiveness of our capabilities, and may create harsher conditions for our military operations.

> - For instance, increases in ambient temperatures coupled with changing air density can have a detrimental impact on fixed- and rotary-wing aircraft performance and air transport capability. On another level, preventing the overheating of military aircraft requires an increased logistical effort and higher energy consumption. Many transport routes are located on coastal roads, which are particularly vulnerable to weather extremes. These issues must also be factored into operational planning scenarios in addition to engineering and technology development.

3) What is being done by the Defence Sector to prevent this?

3-1 General Action Plans and Roadmaps:

- EU and NATO are working on understanding the implications of climate change, to better prepare for the future and adapt their forces to extreme circumstances whilst reducing their ecological footprint.

> ◆ The EU approved the ***European Green Deal***, in December 2019,

> – Acknowledges the challenges from climate change and presents them , namely to the Security and Defence sector, as significant threats multipliers and sources of instability, and the urgent need to develop a strategy towards sustainable development parallel to the need to increase climate and environmental resilience to face its consequences,

> – And points out that Climate policy implications should become an integral part of the EU's thinking and action on issues such as Defence research and development, industry and technology or infrastructure, as well as the EU Common Security and Defence Policy (CSDP).

> ◆ The ***EU Green Deal*** closely relates to the areas covered in the ***Climate Change and Defence Roadmap***, published later in November 2020 by the European External

Action Service (EEAS). This *Roadmap* outlines how the defence sector should adapt to climate change and presents a concrete set of actions, namely the need for strategic foresight, data gathering and possible targets, putting forward mitigation and adaptation measures.

This *Roadmap* will contribute to the **European Green Deal** by aiming to reduce the emissions in the Defence sector as part of the collective effort toward climate neutrality by 2050, increased energy sustainability and the prioritization of energy efficiency.

Practically, both the *Climate Change and Defence Roadmap* and the EC's recent "*Defence Package*" announce actions to tackle the challenges of climate change versus defence efficiency .

> - One concrete outcome of the EU's commitment to decarbonize the defence sector is the inclusion in the **European Defence Fund (EDF)** of a **cluster "Energy resilience and environmental transition"** . With this cluster, EDF includes topics related to energy management and energy efficiency with a total allocation of €133 million to support R&D of defence technologies and products.

> - Linked to this, **EDA** has just launched the work of its new **CapTech on Energy and Environment (EnE)** which intends to foster cooperation among Member States , Industry and Research Centers ,

◆ In 2021, NATO approved the ***Climate Change and Security Agenda***, which encompasses measures to increase Allied awareness of the impact of climate change on security and, late in 2021, agreed on a ***Climate Change and Security Action Plan***, . In this context, NATO will conduct an ***annual Climate Change and Security Impact Assessment***. This assessment will analyse the impact of climate change on NATO's strategic environment and NATO's assets, installations, missions and operations. Furthermore, data on energy demand and consumption in the military could inform Allies' investment decisions, help define the role of Emerging Disruptive Technologies and innovative energy-efficient and sustainable technologies, as well as inform operational planning. NATO will also study the feasibility of scaling up innovative low carbon technologies through its procurement practices.

◆ Additionally, a ***Strategic Compass for Security and Defence*** has been approved by the EU Council, in March 2022. This Compass points out the repercussions that climate change, environmental degradation and natural catastrophes will have on the EU's safety, giving the Sahel, the Amazon and the Arctic region as some examples of instability and conflict proof. For instance, the exploitation of energy resources for political purposes is a concrete example in this regard. The document says that decarbonising and making our economies more resource-efficient and circular come with specific security challenges, including access to critical raw materials, value chain management and sustainability, as well as economic and political shifts caused by the transition away from fossil fuels. As seen throughout the pandemic, global health crises can also impose considerable strains on societies and economies, with far-reaching geopolitical implications, and disrupt key trade routes putting critical supply chains under pressure and affecting economic security.

<u>**3-2 Importance of the Defence Sector and its Specificities :**</u>

To understand the importance and weight of the Defence and Security Sector to achieve goals under all these strategic documents, it is important to point out that the global defence sector is an energy-intensive industry and armed forces are the largest public owner of free land and infrastructures.

Reducing energy demand and increasing energy resilience are essential for the armed forces to ensure a high level of readiness and sustainability as well as independence. As an example, most of the military infrastructure is not sufficiently energy-efficient, heating alone accounted for 32% of EU armed forces' energy consumption in 2017 (see EDA's factsheet Defence Energy Data 2016 & 2017).

Then, to achieve the EU's goal of carbon neutrality, it is crucial to harness innovation to enhance the energy efficiency of the defence sector, including CSDP missions and operations, without reducing operational effectiveness.
Contrary to many ideas, there is no contradiction between armed forces' "greening" efforts and their ability to effectively deter and defend. In fact, emissions reductions, coupled with green technologies, offer operational advantages and enhance resilience.

Conclusions

Many initiatives have been already launched to achieve the goals mentionned hereabove:

1 - to support General Policies:

- At the EU general level:
  - the *Climate Change and Defence Roadmap* (EEAS) and the EC's "defence package" with the European Defence Fund (and its ***cluster "Energy resilience and environmental transition"*** with a total allocation of €133M to support R&D projects).
    and the EDA's ***CapTech on Energy and Environment (EnE)*** which intends to foster R&T cooperation among Member States., Industry and Research Centers ,
- At the NATO level, the ***Climate Change and Security Agenda*** endorsed in March 2021 and its related Action Plan adopted in June 2021 , both being references within NATO, especially for **the definition of standards and a common methodology to measure Greenhouse Gas Emissions** (GHG) from military activities and installations.

<u>**2- to enhance cooperation through EDA- EC- NATO – Industry with (ie) the :**</u>

- ***EDA's Energy and Environment Working Group*** (formed in 2014 with Member States support), facilitating exchange of knowledge, best practices and proposing solutions for green, resilient and sustainable energy models, and encouraging cooperative projects;
- ***Consultation Forum for Sustainable Energy in the Defence and Security Sector*** (CF SEDSS), with its phase III (2019-2023) objectives,

- EDA's *Energy & Environment CapTech*,
- the *Incubation Forum on Circular Economy in European Defence* (IF CEED) launched in 2021 to help applying the EU Green Deal's Circular Economy approach to the European defence sector (MoDs, Defence Industry, RTOs, financial institutions and academia ;
- EDA's Consultation forum to explore hydrogen technologies for green Defence.
- and the EDA *REACH Task Force.*

Proposals & Recommendations

Brussels"s based Institutions should identify, monitor and assess what is already in place in Europe to pave the way to additional actions and road maps at national and international level .

This means :
  - Follow and identify further development of already launched collaborative projects like Smart Energy Camps (EDA) or Smart Energy initiative (NATO),
  - Monitor, **all the EU initiatives** listed here above to enhance cooperation in the Defence sector and avoid misleading fragmentation which could lead to counter productive effects,
  - Use existing and identify potential news mechanisms with the aim to take into account the Defence Specificities ,
  - At the operational level, use when possible all the military exercises to test the viability of existing and potentially mature operational and technical solutions .

To conclude, although there are still many challenges to overcome (level of awareness, funding mechanisms, legislative barriers, operational requirements and defence specificities), all the numerous existing EU initiatives aiming to design sustainable energy models in Defence would ensure I, the near future resilience and energy autonomy of European armed forces.
A combination of national efforts, multinational cooperation (EU/NATO level) and Defence Industry's inputs will be the key to reach these challenges.