



# Metis

## Study

### Armed forces and the European Green Deal

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# Summary

**W**ith the European Green Deal, the EU has set itself the goal of becoming climate neutral by 2050. That includes more robust environmental protection, a sustainable economic order and climate-friendly growth. The aim is to reduce the

effects of climate change and environmental risks and to achieve the climate goals set forth in the Paris Agreement. The social and economic changes prompted by the Green Deal will lead to new transformation challenges and security implications for armed forces

## **The Green Deal 2050+**

In December 2019, the European Commission launched a new growth strategy to tackle climate change and its associated challenges. The core idea of the Green Deal is to transform the European Union into a climate neutral economic area by 2050. In order to achieve this goal, net emissions of greenhouse gases must be reduced to zero, for example through de-carbonisation. The economic paradigm of increased resource consumption promising more economic growth will also be gradually replaced by a green economic policy that permanently decouples growth from the consumption of fossil resources. In pursuing low-emission production, industry will get closer to climate neutrality and focus more on recycling raw materials. Environmental and climate protection will play a more important role in EU agricultural policy and significant parts of the EU budget will be dedicated to this purpose.

In order to achieve the ambitious goal of a climate neutral continent that can reap the economic benefits of green technologies and innovation, the EU Commission has initiated an action plan with more than fifty packages of measures to be initiated step by step between 2020 and the end of 2021. The measures include, for example, multi-billion euro investments in new, environmentally friendly technologies, financial and legal support for industry in the development and implementation of green innovations, long-term de-carbonisation of the European energy sector, and efforts to increase the energy efficiency of buildings. In the transport sector, the measures involve expanding European emissions trading to include

shipping as well as promoting electric vehicles through targeted tax laws and purchasing incentives. Although some measures were delayed and available resources are reduced as a result of the COVID-19 pandemic, the EU Commission is not expected to deviate from its ambitious goals or the original schedule.

In an international context, the Green Deal also foresees close cooperation with international partners in order to improve global environmental standards. New regimes in areas such as the economy, transport, energy as well as research and development aim to support European industry in its efforts to meet transformation challenges, maintain international competitiveness and provide legal certainty. Future EU trade agreements will also have to comply with the climate objectives of the Paris Agreement. The Commission also hopes to spark initiatives beyond Europe and to inspire many others to follow suit. The Commission believes that this is the only way to curtail worldwide environmental degradation and to limit global warming.

The Green Deal therefore pursues two major objectives simultaneously. Firstly, it will serve as an expression of the political and social will to counteract anthropogenic climate change in an effort mounted by society as a whole, both in Europe and worldwide. Because of the foreseeable negative effects and consequences of climate change, such efforts can no longer be limited to individual policy areas. A green revolution is needed to radically reform all political, economic and social spheres. Secondly, this green revolution will stimulate Europe and trigger an economic boom. Aside from protecting the



Fig. 1 Multi-purpose helicopter NH-90 flying near Gao as part of the UN Mission MINUSMA, February 6, 2017.

environment, the Green Deal should thus also be understood as a revitalisation programme for the EU economy. Originally, the aim was to overcome the paralysing effects of the banking and financial crisis in the 2010s. The Green Deal is now also considered a post-COVID-19 plan, however. The technological advantage in research, innovation and development promised by the Green Deal will be used not only to establish the EU as an environmental pioneer but also to maintain its global competitive edge in the long run.

The Green Deal has many implications for European armed forces and thus also for the Bundeswehr. On the one hand, future security considerations will focus more than ever on climate change and efforts to tackle it. New climate-related mission types and operational scenarios will also likely emerge. On the other hand, the political, social and economic transformation processes triggered by the Green Deal will have a lasting impact on the Bundeswehr when it comes to technology, material and personnel.

### The implications of climate change for the Bundeswehr

The effects of climate change on the Bundeswehr are already apparent in some areas. Military facilities in Germany, such as harbours or Bundeswehr sites near the coast, will be affected directly by rising sea levels. As another consequence of climate change, the operation profile of the Bundeswehr will likely also continue to change. It is already clear that, while national and collective defence as well as host nation support will continue to play a key role, they will eventually be overshadowed by new priorities in the area of subsidiary and administrative assistance in emergency situations at home. In terms of territorial tasks, the Bundeswehr already supports civilian actors when it comes to containing and managing natural disasters and large-scale emergencies and provides assistance for rebuilding efforts. The Bundeswehr also provides training assistance in preparation for extreme natural disasters and, in keeping with the principle of subsidiarity, advises civilian decision-makers at district and federal state level



via liaison detachments, thus making a contribution to strengthening overall national resilience. This goes to show that the Bundeswehr already plays a key role in crisis management and disaster control at the national level.

Far-reaching implications for forces on operations abroad must also be expected. International missions will increasingly take place in regions that are more immediately affected by the consequences of climate change, such as on the African continent. The operational spectrum will gradually come to include more humanitarian and disaster relief tasks.<sup>1</sup> This will result in an increased demand for training, equipment, protection, resilience and sustainability when it comes to both personnel and technology. Climatic and environmental factors must be considered when it comes to force protection, while mission accomplishment even under extreme climate conditions will play a more important role during training. The task spectrum abroad will also be substantially expanded. Besides the accomplishment of mandated missions, disaster control, crisis management and local humanitarian assistance will also play a more important role. In addition, the technology used to accomplish these tasks will have to meet increasingly high standards, as vehicles and equipment will be exposed to more extreme weather and operational conditions. A higher proportion of special and recovery vehicles and a growing demand for amphibious, tropical and, where appropriate, CBRN capabilities must also be expected.

### **Security implications of the Green Deal**

European armed forces too will face demands to reduce greenhouse gas emissions. In the era of climate change, the Bundeswehr as a large-scale user of fossil fuels must primarily ensure the sustainable supply for its existing vehicle fleet. Future investments to reduce greenhouse gas emissions in the Bundeswehr must also be considered, including the supply of new climate-neutral fuels and renewable energy. A first step could be to gradually replace all petrol and diesel cars used by the Bundeswehr in Germany with electric vehicles and to modernise barracks and facilities to make them more energy efficient. The exclusive use of green electricity and an overall reduction of energy consumption can be another contribution towards a greener Bundeswehr. A greener economy will affect training and require specialist personnel. More than ever, the Bundeswehr will have to compete with the corporate sector to attract suitable applicants in key technology areas.

The expected social pressure to reduce emissions will be associated with enormous expense, as the existing

Bundeswehr fleet, especially heavy equipment, struggles to meet the new environmental requirements. This will entail disputes about how to distribute the defence budget as well as a reorientation to cope with the balancing act between the necessary constant transformation of the armed forces, the assumption of international responsibility and overall German greening efforts. A low-emission, digital and high-tech Bundeswehr in line with the Green Deal and with current political and social preferences is certainly worthwhile, but the new security implications that will arise as a result should not be underestimated.

The environmental targets can be achieved through a high-tech, digital, emission-free green national economy. At the same time, however, such an economy is subject to new risks stemming from just-in-time logistics, digital networking, the demand for rare earth elements and the growing demand for cyber security, for example. For the European states and their armed forces, this means that a green transition across all of society should also be accompanied by new security procedures, redundancies in case of failure, fall-back options and new resilience approaches.<sup>2</sup> Unlike fossil energy technologies, which are mostly analogue, green technologies are more electric, digital and networked. They are thus more susceptible to disruption by both natural events and targeted attacks by malevolent actors. Green technology needs a robust cyber security architecture, redundancies and resilient systems to reduce vulnerabilities that external actors seek to exploit. The protection of critical infrastructures will thus remain an integral part of the core mission of national and collective defence in the long term. For armed forces, this means that, while they can participate in the green transition of society, they must sustain their capacity to act and respond in an emergency by maintaining conventionally powered vehicles, the technical expertise to operate them as well as the necessary fuels. In spite of the radical changes envisioned by the Green Deal, the essential elements of armed forces in particular will thus have to continue to rely on fossil fuels. This is the only way to maintain operational readiness for the foreseeable future even in the event of widespread disruptions in the wake of hybrid attacks on energy, transport and communication networks.

Goals that may be possible in principle during peacetime when faced with hybrid threats and in a national context, will remain unattainable for operational scenarios until 2050. Low-emission, globally deployable naval units or electrically powered fighter jets and transport aircraft are mere theoretical concepts, still confined to the drawing board for now. Given the technological challenges still to overcome, their actual development

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<sup>1</sup> See "Every tenth of a degree counts", Metis Interview No. 1 (May 2019).

<sup>2</sup> See "Resilience", Metis Study No. 21 (November 2020).



and commercial and military use are currently not on the horizon. As for land forces, electric vehicles are not likely to become suitable and usable in the foreseeable future. In the context of operations abroad, military enforcement action in accordance with Article 42 of the Charter of the United Nations, peacekeeping missions or humanitarian assistance operations, the infrastructure needed to operate and maintain such low-emission vehicles and equipment is unlikely to be available or would require complex and extensive logistic effort to provide.

New risks are also expected in the area of energy security. Much like price stability, open sea routes, pipelines and stable conditions in producing countries influenced oil and raw material imports for German industry in the 20th century, so will the use of primarily green technologies likely affect the demand for certain raw materials. Green energy thus entails the risk of causing international and internal conflicts over distribution and resources in much the same way fossil resources still do. A common Green Deal of Western countries could be accompanied by two developments that are relevant in terms of security. Firstly, a large number of countries have made enormous financial investments in fossil energy and industry over the past four decades. These national economies thus depend on making the most of these investments for decades to come and will seek political means to slow the pace of the greening and de-carbonisation of international economic policy. This risks the formation of political and economic blocs between “green” major powers and fossil-based ones. Secondly, green technologies depend on special minerals and rare earth elements<sup>3</sup>, which are mainly found in the most fragile states of Africa, Latin America and Asia. The large majority (73%) of graphite reserves are located in very fragile or even failed states, as are those of selenium (76%), cobalt (70%), tellurium (67%)

and molybdenum (70%). In combination with the effects of climate change, this situation is likely to tip these states over into established patterns of conflict over raw material extraction. The green transition and the associated global rush on special minerals and rare earth elements from Africa and Asia are also likely to entail developments associated with wartime economy. Sub-state conflicts in the producing regions in Europe’s neighbourhood could thus arise as a possible consequence of a green revolution in Europe.

European armed forces and the Bundeswehr will make their contribution to a climate-neutral continent as part of the Green Deal. This contribution must meet the demands of existing and future challenges, however. To ensure their operational readiness, armed forces will have to continue to use fossil energy sources for the time being. The Bundeswehr will nevertheless have to become greener wherever it can rely on renewable energies and low-emission fuels. To conclude:

- The Green Deal will lead to climate change being factored into strategic considerations more than ever before.
- National and collective defence will be supplemented by national resilience capabilities to protect critical infrastructures. Subsidiary assistance through administrative assistance will be a new focus at the national level.
- The Bundeswehr will support national efforts to reduce emissions while continuing to use fossil energy sources and fuels in order to maintain its operational readiness.
- As for operations abroad, the share of low-emission equipment based on green technologies is expected to remain low for the foreseeable future.

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<sup>3</sup> See “Increasing competition for resources”, Metis Study No. 9 (November 2018).



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