European Green Deal as a matter of security

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Abstract. The European Green Deal (EGD) is a set of policy initiatives by the European Union with the overarching and ambitious aim of making Europe climate neutral in 2050. Being world’s first ‘climate-neutral bloc’ and fulfilling other goals extending to many different sectors, including construction, biodiversity, energy, transport, food and others has also an impact on different sectors of security. The implementation of the tasks set out in the EGD requires taking into account the necessity of sustainability in reaching the goals, including not violating sectoral security in the EU Member States. Nexus approach might be useful in the processes of finding and implementation of particular solutions.

1. Introduction

According to aims of the European Green Deal, the European Union is to become the world's first ‘climate-neutral bloc’ by 2050. It is connected with potential carbon tariffs for countries that don't curtail greenhouse gas pollution at the same rate [1, 2]. The Carbon Border Adjustment Mechanism (CBAM) [3] - the mechanism to achieve this overarching aim includes such elements, as:

- a circular economy action plan [4];
- a revision of climate-related policy instruments, such as the Emissions Trading System;
- a revision of the Energy Taxation Directive;
- a Farm to Fork strategy;
- a sustainable and smart mobility strategy;
- an EU forest strategy [5].

The policies are to be financed by EU through InvestEU: an investment plan, which forecasts at least €1 trillion in investment. Furthermore, it is estimated that approximately €260 billion a year is going to be required by 2030 in investments [1].

As it is indicated in the introduction to the document ‘The European Green Deal’, achieving all goals above is necessary ‘to tackling climate and environmental-related challenges that is this generation’s defining task’ [5]. According to the scientific predictions, by the year of 2030, carbon dioxide levels are predicted to double in Europe and temperature is expected to increase by 2-3 °C in the summer season. Over 75% of greenhouse gas emissions are related to the production and use of energy. At the moment, Europe is responsible for one third of the world's gas emissions. At the same time, 700,000 hectares of woodland are burnt annually by fires [4, 7]. In less than 50 years, till 2017, the world's yearly extraction of resources tripled and has been responsible for a 90% loss in biodiversity. In the last two generations, the population of wild species has declined by over 50% [14]. The EU’s industry is currently responsible for 20% of whole greenhouse gas emissions [15]. While 36 million of the population are unable to have quality meal every second day, in EU countries 20% of food production is wasted’. 25% of Greenhouse gas emissions result from transport (where road transport takes 71.7% of this total, aviation: 13.9%, water transport: 13.4%) [12].
However, transformation of the EU into a fair and prosperous society, with a modern economy responding to current challenges, with zero net emissions of greenhouse gases in 2050 would be difficult to fulfill.

2. The European Green Deal and its requirements

Particular aspects of the EGD agenda provide high expectations towards different sectors. To reach target of climate neutrality, main goal is to decarbonize energy system by 2050. If problem areas arise it will be necessary to look over and adjust the energy directive. [6] Many other regulations and strategic documents will also be reviewed. Particular Member States will have to update their climate and energy national strategies to adhere to the EU’s climate goal [7]. The key principles which include such policies and goals as: to prioritise energy efficiency; to secure an affordable EU energy supply; to develop a power sector based mostly on renewable resources; to have a fully integrated and interconnected European energy market [7] might be difficult to follow for some EU Member States. Required changes in the energy mix, including resignation from fossil fuels is difficult to accept in many European countries. Adopted in 2021 by the European Commission the ‘Zero Pollution Action Plan’ intends to obtain no pollution from ‘all sources’ goal by 2050. All industrial are to be enforced to be within toxic-free environments as well as agricultural and urban industries [8]. To reach this goal, resources such as micro-plastics and chemicals, aim to be substituted.

Agriculture is another area of the EGD activity. Strategy entitled ‘From Farm to Fork’ aims to provide food sustainability [9]. Introduced by The European Commission a climate-friendly approach requires new methods of production and transfer of resources. Specific target areas on the field of agriculture include reducing the use of chemical pesticides, increasing the availability of health food options and aiding consumers to understand the health ratings of products and sustainable packaging. It won’t be easy to meet those standards in all EU Member States, especially that European Commission expect to (by 2030): transfer EU agriculture into organic in at least 25 %; reduce the use of pesticides (by 50%) antimicrobials (by 50%) and fertilizers (by 20%), reduce nutrient loss and food waste (by 50%) and create sustainable food labelling [9].

Another area of the EGD is biodiversity presented in The EU Biodiversity Strategy. The document refers to different aspects of management of forests and maritime areas, promote environment protection and addressing the issue of losses of species and ecosystems. By 2030 The European Commission aims to obtain such goals as protection of the sea and land valuable territories (at least 30 %), planting 3 billion trees, restore 25,000 kilometers of rivers (so they will become free flowing), increasing biodiversity and organic farming whilst also reducing the use of pesticides (by 50%) [10].

Following target area within the European Green Deal is a reduction in emissions from transportation [11]. This goal is to increase the adoption of sustainable or alternative fuels in road, maritime and air transport. It also aims to make sustainable alternative solutions available to businesses and the public. Public transport alterations aim to reduce public congestion as well as pollution. Installations of charging ports for electric vehicles intends to encourage the purchase of low-emission vehicles [12]. The ‘Single European Sky II’ plan focuses on air traffic management in order to increase safety, flight efficiency and environmentally friendly conditions [13].

The European Green Deal has faced a lot of criticism, both from non-governmental organizations and EU Member States as well. Greenpeace and other pro-environment organizations have argued that ‘the deal is not drastic enough’ so it will not complete the goal to slow down climate change or at least make it ‘acceptable’. The Corporate Europe Observatory calls the EGD as a grey deal and argued that it is just ‘a positive first step’ [16, 17]. On the other hand, there has been criticism of the Deal potentially being destructive to the European Union in its current state and even could lead some EU Members States to push towards an exit from the union. At the same time some European states are on their way to eliminating the use of coal, many others still rely heavily on it. Among some countries, especially from Central-Eastern Europe, there is an anxiety, that the economic impact of the deal is likely to be unevenly spread among EU Member States. There is a belief that by introducing the tasks of the Green Deal, many countries will violate sectoral security in areas such as energy, food or industrial development. A
particular area of concern is the economic condition of households, which may worsen as a result of the implementation of the requirements of the EGD.

3. The European Green Deal and different sectors of security
The collapse of the bipolar world was followed by the expansion of security category. Terrorism, organized crime, hunger and environmental degradation were named the new global threats and security studies expanded the perspective referring that collective security is a sum of subjectively construed human securities, which has economic, social and ecological dimension, not only a military or political one [18, 19].

United Nations Office for the Coordination of Humanitarian Affairs included into definition of security a wide range of areas, such as: Economic: where security is connected with creation of employment and measures against poverty; Food: where security opposed to hunger and famine; Health: where security activity measures against disease, unsafe food, malnutrition and lack of access to basic health care; Environmental: where security is understand as activity against environmental degradation, resource depletion, natural disasters or pollution; Personal: where security opposed physical violence, crime, terrorism, domestic violence and child labour; Community: where security acts against inter-ethnic, religious and other identity tensions or Political: understand as measures against political repression and human rights abuses [20]. These and other security subcategories play an increasingly important role in the 21st century. They emphasize various needs of a human beings and the importance of satisfying them in the context of their personal security. In case of the European Green Deal, we can talk about activities that affect such security areas as energy, economic, environmental, health, water and food.

3.1. Definitions
Environmental security is one of main sectoral securities affected by EGD. It can be defined as the process of peacefully reducing human vulnerability to human-induced environmental degradation by addressing the root causes of environmental degradation and human insecurity [21]. This broad category includes, among others, water security, understood as ‘the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability’ [22]. From the environmental and ecological perspective, energy is interpreted as being understood as a derivative of changes in energy resources and the methods of obtaining them. However, one should adopt its more common definition, where energy security is interpreted as ‘the uninterrupted availability of energy sources at an affordable price’ [23].

According to Food and Agriculture Organization (FAO), ‘food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life’ [24]. According to World Health Organization (WHO) health security might be defined as ‘the activities required, both proactive and reactive, to minimize the danger and impact of acute public health events that endanger people’s health across geographical regions and international boundaries.’ [25]. Economic security refers to long-term security of the access to economic opportunities in markets and resources such as people (human capital), capital, energy, water, technology and education [26]. While from a macroeconomic viewpoint, the problematic of economic security addresses budget and diminution of shortfall, the microeconomic perspective focuses on ensuring general wealth conditions to people and the support of other components of national security [27]. All these security perspectives have to be met by the EGD requirements and strategies.

3.2. Threats for national security of EU Member States results from the EGD requirements.
Relationship between climate change and security is discussed by the European Commission in the third section of the Communication on The European Green Deal. The climate change is seen as a ‘threat
multiplier’ and the EGD will provide the ‘ecological transition which will reshape geopolitics, including global economic, trade and security interests [5]. The idea that climate change multiplies threats was presented in earlier European strategies and policies. However, in the EGD it is invoked to suggest that climate change potentially poses a threat to regional and international stability, presumably with the intention of motivating other governments to act on climate change [28]. This narration is to be the justification for implementing the EGD and providing environmental security for EU citizens.

Economic, social and environmental costs of current situation in national (often fragmented) energy markets is a challenge for the EU. Energy dependence of particular European countries has become evident as a consequence of the geopolitical turmoil during the two Oil Crises of the 1970s and in disruptions of Russian gas supplies in 2006, as well as 2009. The European Energy Security Strategy highlight in the introduction that EU imports about 53% of the energy it consumes, which makes it the largest energy importer in the world [29]. At the same time, energy is a policy area in which the EU shares competences with the individual Member States, who have distinct domestic energy profiles and needs, as well as sovereignty in their choice of energy mix and supply connections. Without cooperation at the union and national level, ambitious changes in the field of energy will not have a chance of success, even if they are subject to penalties for failure to implement the provisions of the EGD.

Meanwhile, energy security is perceived differently by Member States. While Germany sees its improvement through the construction of the Nord Stream and Nord Stream II, for Poland, the construction of a gas pipeline is considered as a threat to their energy security. In many EU countries there is more or less fear of nuclear energy. Finally, countries have different possibilities of producing renewable energy due to their geographic location (number of sunny days per year, wind strength, availability of flowing water, etc.) Some countries see only benefits in resigning from burning coal, but for others it is a disturbance of the basis of the national energy mix due to their own coal deposits. The energy context of the EGD is also important in the Union's external relations. Green Deal entails a fundamental overhaul of the European energy system and, as a consequence, it will also change and redefine the relationships between the EU and its neighborhood included energy resources providers, what might have a geopolitical repercussion. The EU should prepare to manage these repercussions in its relationships with important countries such as Russia and Algeria, and with global players such as the United States, China, and Saudi Arabia [30].

As it was indicated in the introduction section, the EGD will cost about €1 trillion over the next decade. The biggest share, €503bn, should come from the EU budget, unleashing a further €114bn from national governments. The next €279bn would come mostly from the private sector: companies would be encouraged to make risky green investments by loan guarantees from the European Investment Bank. A €100bn will be spent for ‘just transition’ mechanism to help retrain workers who lose jobs in shuttered coal mines or steel factories. However, some experts say, that the estimated €1tn is only one third of what is needed, if the EU follows through with the commission’s plan to achieve reduction of greenhouse gas emissions. Critics, mostly from the eastern European countries complain there is not enough money spend in coal regions. In 2015 there were 128 coal mines alone in the EU employing more than 238,000 people from Aragón to Silesia [31]. Only in case of Poland, achieving EGD goals till 2050 means spending every year 2 % of polish GDP. It is exactly the same, how much country spends on military [32]. The EU might face a protest from its citizens, fueled by populist politicians. The green agenda will meet more and more opposition as citizens realise it will affect their lifestyles and spendings as well as make Europe becoming less competitive than not carbon-neutral countries and regions.

4. Nexus approach
Making climate change the main threat and environmental security - the main protected value does not seem to be a good strategy in the presented context. Hence the proposal of the nexus approach, allowing for more sustainable implementation of comprehensive goals.

It is widley proved, that climate challenges are mostly cross-sectoral. The water– energy–food (WEF) nexus defined as coordinated approach to climate change across the three main sectors, is one of crucial proofs [33]. The nexus perspective not only shows interconnections between indicated sectors and seek
for coordinated approaches to cope with challenges, but shows trade-offs and synergies across the sectors to be taken into account as well [34, 35]. These interdependencies of the WEF securities have received growing attention in the past years both in academic and policy-making sectors. Such organisations as the World Economic Forum identified implementation of the Nexus as a major global economic challenge (in 2011) and the Bonn conference in the same year ‘put forward the Nexus approach as a fundamental necessary shift for sustainable development’ [36, 37]. Specialists have appreciated long and precise process of systems analysis based on scientific evidence. Ensuring sustainability by providing access to resources for the most vulnerable and promoting efficiency in resource use are the guiding principles of the nexus approach. Integrated approaches offer the potential of providing decision makers with the information needed to support sustainable development pathways [38]. Figure 1 presents WEF nexus and its implication for industrial development, health and education.

**Figure 1.** Interactions between water, energy and food targets and its implication for other sectors [38].

In the context of the EGD, WEF nexus should be expanded by energy and climate. Such approach was tested in project SIM4NEXUS - Sustainable Integrated Management FOR the NEXUS of water-land-food-energy-climate for a resource-efficient Europe [39]. In the report with results of the project underlined, that ‘land, food, energy, water and climate are interconnected, comprising a coherent system (the ‘Nexus’), dominated by complexity and feedback. Understanding the Nexus is critical to secure the efficient and sustainable use of resources.’

European Commission declares that includes the nexus approach to the implementation of the EGD. New Horizon 2020 projects, such as NEXOGENESIS, refer to the water-energy-food-ecosystem nexus (WEFE nexus) [40]. However still climate change takes precedence over other threats.

5. Conclusions
Climate change, although it poses a significant threat to the future of Europe, cannot be the main perspective taken into account when implementing the assumptions of the EGD. Threats to environmental security, while significant, are not the only threats faced by Europe's developed societies; so they cannot be solved by increasing the old ones or creating new ones. The resistance that the
implementation of EGD raises in some European public opinion requires a more balanced approach and verification of plans in the popandemic reality.

The effective implementation of the ambitious assumptions of the EGD will allow to solve many of today's problems of EU countries, outside the climate area as well. Increasing the share of renewable energy sources in national energy mixes will make local energy markets independent of raw material imports (e.g. from Russia), which will translate into increased energy security of these countries. Cheaper energy also means lowering the prices of food or industrial development products. However, these effects will appear slowly, and the expenses that have to be incurred first terrify some political decision-makers and ordinary citizens. So if the European Green Deal is to be a successful project of the technical revolution, it must be presented as a project that successfully meets the multiple challenges and needs of Europeans, especially in the areas they include in the security category.

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