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**Towards an Energy-
Climate-Defence Nexus in
the European Union and
beyond? – Reflections on
concept and assessment
of an emerging nexus**

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Towards an Energy-Climate-Defence Nexus in the European Union and beyond? – Reflections on concept and assessment of an emerging nexus

The energy-climate-defence nexus is an emerging research and policy concept that examines the complex and interrelated relationships between energy policy, climate change and defence. While the nexus approach is widely recognised in theory, there is a lack of clear conceptual depth and a systematic assessment framework, particularly with regard to a 'triple nexus' that combines these three dimensions. This article discusses the existing concepts and shows that, although the existing literature and political practice represent first steps towards an energy-climate-defence nexus, essential elements of a comprehensive nexus approach are still missing. In initial considerations, the article outlines the concept and possible framework conditions of an energy-climate-defence nexus.

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1 Introduction

The energy-climate-defence nexus is an emergent framework that captures the intricate and interdependent relationships between environmental resources, energy systems, climate change, and defence dynamics.¹ The academic and public understanding of the linkages and interdependencies between climate change, energy transition and security, as well as national security has grown tremendously in the last decade.²

Building on the nexus approach, the nexus framework and on the findings of existing analyses of two-node nexi of energy-climate, energy-security, and climate-security (both including the traditional security sector and therefore defence), this paper aims to develop the main features of a triple node nexus: the energy-climate-defence nexus. One of the first comprehensive study addressing the climate change, energy, and defence nexus in 2023 underscores the vulnerability of defence-related critical energy infrastructure to climate impacts.³ This study, part of the EU's Strategic Compass for Security and Defence,⁴ provides concrete recommendations for defence decision-makers on climate change mitigation and adaptation, aiming to enhance climate resilience while contributing to climate neutrality.⁵

This acknowledgement and application of the multi-node nexus of energy-climate-defence is well timed. In view of the ongoing geopolitical effects following the Russian war of aggression in Ukraine, but also the continuing progress of climate change and the challenges of global, regional, and national energy transformations, it seems beneficial to find joint, cross-sectoral solutions.⁶ However, as is shown in this article, this study lacks a sound theoretical background and is by no means effectively introducing the concept of the energy-climate-defence nexus.⁷ Against the background of well-established nexus assessment framework and principles within other policy areas, this paper examines this first study on the energy-climate-defence nexus to lay the foundation for this concept. In doing so, this

¹ See for one of the first studies to address this nexus JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884.

² See for an outstanding example the joint communication of the European Parliament and the Council on JOIN (2023) 19 final.

³ JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884.

⁴ EEAS (2022): Strategic Compass for Security and Defence, online https://www.eeas.europa.eu/sites/default/files/documents/strategic_compass_en3_web.pdf.

⁵ JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884.

⁶ Cf. Milazzo (2023): The Nexus Approach: bringing together climate, human security, and demographic change in times of permacrisis, European Policy Centre Discussion Paper, p. 5, online https://www.epc.eu/content/PDF/2023/Nexus_DP_v2.pdf, who speaks of the current challenges as providing momentum to use the nexus approach.

⁷ Cf. Milazzo (2023): The Nexus Approach: bringing together climate, human security, and demographic change in times of permacrisis, European Policy Centre Discussion Paper, online https://www.epc.eu/content/PDF/2023/Nexus_DP_v2.pdf.

paper asks in how far the European Union is on its way towards a comprehensive energy-climate-defence nexus assessment.

1.1 Security at a forefront

The study mentioned above and commissioned by the European Union, as part of the EU's Strategy Compass for Security and Defence, is not the result of a European vision or foresight of the future.⁸ Rather, this study is the answer to actual geopolitical developments and an expression of increasing securitisation. Not least in the wake of the Russian war of aggression in Ukraine, the increasing geopolitical tensions in its aftermath, the energy crisis and the sabotage of pipelines in the Baltic Sea Region, a comprehensive securitisation of energy policies (and other policy areas) becomes evident in the European Union and beyond.⁹ Security, it seems, is no longer a mere component of the discourse on climate change and energy transition, but rather an essential pillar of climate protection and energy policy.¹⁰ Indeed, security is at a forefront and in some cases even might trump climate and energy policy. In our current age of transformation and crisis, security has become a *leitmotif*. Concepts and theories of governance, like the nexus approach, must take this phenomenon of securitisation into account.

1.2 System and nexus thinking

Neither nexus nor system thinking are new concepts or perspectives.¹¹ Simplified and shortened, these and comparable approaches are based on the insight that fragmenting policies and governance into policy silos and sectors neither reflects reality nor leads to appropriate answers and solutions.¹² The reasoning for such a rejection of segmented policies is regularly based on the acknowledgment of holistic systems or the application of broader concepts founded in natural sciences like planetary boundaries and Earth System sciences.¹³ Though these and other approaches may differ significantly in the details the underlying conclusions stays the same: Policies ignoring existing interrelations within social or natural systems will fall short of solving current and future problems. In opposite to sectoral policy approaches a comprehensive, holistic approach is necessary to grasp and address the different layers, relations, synergies and trade-offs within the respective system. Nexus and system thinking are expected to provide such a comprehensive and holistic approach to problem solving.

⁸ JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884.

⁹ See for the securitisation of energy policy in the European Union and the Baltic Sea Region in particular World Energy Council (2024): Evolving with Resilience and Justice. World Energy Trilemma 2024, online <https://trilemma.worldenergy.org/reports/main/2023/World%20Energy%20Trilemma%20Index%202024.pdf>; cf. Slakaityte et al. (2022): Energy Security in the Baltic Sea Region – Transition within geopolitical constraints, Danish Institute for International Studies Report, online https://pure.diis.dk/ws/files/10998512/Energy_security_in_the_Baltic_Sea_Region_DIIS_Report_2022_08.pdf.

¹⁰ Cf. World Energy Council (2024): Evolving with Resilience and Justice. World Energy Trilemma 2024, online <https://trilemma.worldenergy.org/reports/main/2023/World%20Energy%20Trilemma%20Index%202024.pdf>; cf. Slakaityte et al. (2022): Energy Security in the Baltic Sea Region – Transition within geopolitical constraints, Danish Institute for International Studies Report, online https://pure.diis.dk/ws/files/10998512/Energy_security_in_the_Baltic_Sea_Region_DIIS_Report_2022_08.pdf.

¹¹ See Boas et al., in: International Environment Agreements 2016, Vol. 16 (3), pp. 453 ff.

¹² Cf. Boas et al., in: International Environment Agreements 2016, Vol. 16 (3), pp. 453 ff.

¹³ Cf. Boas et al., in: International Environment Agreements 2016, Vol. 16 (3), pp. 453 ff.

2 The Nexus approach

The nexus approach gained prominence in the academic and public sphere in the year 2011.¹⁴ However, nexus thinking has occurred way before and is sometimes dated back to the 1980s.¹⁵ Nexus thinking or the nexus approach is based on the acknowledgement of existing interrelations, linkages and inseparabilities of different policy fields.¹⁶

The word nexus, from Latin, stands for the connections between objects.¹⁷ Nexus thinking aims to make these connections visible, to identify synergies and trade-offs of different governance options, and to identify possible multi-dimensional goals, benefits and policies.¹⁸ The nexus approach itself is by no means the objective of such an analysis. In other words: nexus analyses do not aim to achieve a *nexus*. Rather, the nexus approach is a framework and research perspective. In fact, determining the objective of applying this framework is part of the nexus approach or takes place prior to the analysis.

Without prejudice to these short introductions to the nexus approach, it must be noted that a uniform definition of the nexus approach is far from established.¹⁹ Rather, studies on the concept of the nexus approach show a multitude of sometimes diverging approaches, regardless of the similarities that already shown above.²⁰ Indeed, some scholars speak of an immature concept and the lack of a sound conceptual basis for the nexus approach.²¹ It is true that a solid foundation is needed to ensure scientific comparability, verifiability or falsifiability respectively of nexus studies.²² Also, if the nexus approach is used as a buzzword, there is a risk that the intended transfer of scientific findings into political practice and governance will fail.

Despite this criticism of the nexus approach and in consideration of the core pillars and characteristics of the nexus approach already outlined above one can rightfully argue that the minimum features of a

¹⁴ BMU (2011): Conference Synopsis - Bonn2011 Conference: The Water, Energy and Food Security Nexus Solutions for the Green Economy, online https://uploads.water-energy-food.org/resources/bonn2011_nexussynopsis.pdf; see Boas et al., in: International Environment Agreements 2016, Vol. 16 (3), pp. 452 f.

¹⁵ See on the “apparent newness” of the nexus approach Benson et al., in: Water Alternatives 2015, Vol. 8 (1), 757.

¹⁶ UNECE (2017): Deployment of Renewable Energy: The Water-Energy-Food-Ecosystems Nexus Approach, online https://unece.org/DAM/energy/se/pdfs/gere/publ/2017/DeploymentOfRenewableEnergy_TheWaterEnergyFood.pdf; UNECE (2021): A nexus approach to transboundary cooperation, online https://unece.org/sites/default/files/2021-01/ece_mp.wat_none_12_SummaryBrochure_Nexus_Final-rev2_forWEB.pdf.

¹⁷ Cf. Boas et al., in: International Environment Agreements 2016, Vol. 16 (3), pp. 452.

¹⁸ UNECE (2017): Deployment of Renewable Energy: The Water-Energy-Food-Ecosystems Nexus Approach, online https://unece.org/DAM/energy/se/pdfs/gere/publ/2017/DeploymentOfRenewableEnergy_TheWaterEnergyFood.pdf.

¹⁹ Cf. Brouwer et al., in: Sustainability Nexus Forum 2023, Vol. 31, pp. 41-65.

²⁰ Cf. Brouwer et al., in: Sustainability Nexus Forum 2023, Vol. 31, pp. 41-65.

²¹ Urbinatti et al., in: Journal of Integrative Environmental Sciences 2020, Vol. 17 (2), pp. 21-43; cf. Purwanto et al., in: Sustainability 2021, Vol. 13 (4), 1919; Albrecht et al., in: Environmental Research Letters 2018, Vol. 13 (4).

²² Cf. Milazzo (2023): The Nexus Approach: bringing together climate, human security, and demographic change in times of permacrisis, European Policy Centre Discussion Paper, p. 5, online https://www.epc.eu/content/PDF/2023/Nexus_DP_v2.pdf. Milazzo speaks of the risk to otherwise simplify the nexus approach to a mere coordination imperative; see on gaps of the nexus approach Ramos et al. (2022), in: Frontiers in Environmental Science, 10:787415. doi: 10.3389/fenvs.2022.787415.

conceptual framework indeed exist.²³ Criticism of the nexus approach must not ignore the fact that nexus thinking is merely a research lens.²⁴ However, the framework of this research lens appears to be outlined sufficiently clear with the focus on interrelations, synergies, trade-offs and multi-dimensional goals and outcomes. Further foundations for nexus assessment are not required, as these can be explained and may also be divergent in the respective studies themselves.²⁵ Quite the opposite is true, demanding the introduction and application of a detailed and fixed assessment framework for the nexus approach will reduce the scientific and policy impacts of this research perspective significantly. Instead of being an open, comprehensive, holistic and adaptable framework the nexus approach would become yet another re-interpretation of existing and mostly sectoral analyses.²⁶

Notwithstanding these comments, a detailed nexus assessment has emerged prominently in the context of the water, energy and food security nexus. Indeed, the nexus approach is primarily used in resource management, environmental resources, and sustainability. It is based on the understanding that environmental resources are inextricably intertwined and mutually dependent. This approach emphasises viewing these elements as part of a complex, interconnected system rather than as isolated components. A key principle is that nexus solutions should benefit more than one sector simultaneously. This conceptual approach helps to better understand, describe, and address complex interrelations, anticipating potential trade-offs, synergies, and interrelations to design and prioritize better solutions. In this nexus under the water convention, a comprehensive nexus assessment with guiding principles has been developed.²⁷ Key messages of these principles are to put people and basic human rights at the centre of nexus, to create awareness for effective frameworks and governance, and to involve local communities, indigenous and women's groups fully.²⁸

However, despite the prominence of the water convention and the application of the nexus assessment framework, the nexus approach is not limited to this particular policy field.²⁹ Indeed the nexus approach has been discussed in several policy areas, including climate, gender, humanitarian, etc.³⁰ and most prominently next to the water convention in the context of the Sustainable Development Goals.³¹ With the introduction of the SDGs following the Millennium Goals, the application of a holistic approach

²³ Cf. Cf. Brouwer et al., in: Sustainability Nexus Forum 2023, Vol. 31, pp. 41-65.

²⁴ Cf. Boas et al., in: International Environment Agreements 2016, Vol. 16 (3), pp. 455. The authors argue that the strength of the nexus approach does not lie in its conceptual but the empirical grounding.

²⁵ See Cf. Brouwer et al., in: Sustainability Nexus Forum 2023, Vol. 31, pp. 41-65, who identify the need for consensus among literature on the conceptual model of the nexus along the questions of "why, what, who, when, where and how".

²⁶ Cf. UNECE (2021): A nexus approach to transboundary cooperation, p. 5, online https://unece.org/sites/default/files/2021-01/ece_mp.wat_none_12_SummaryBrochure_Nexus_Final-rev2_forWEB.pdf. The UNECE speaks of the established assessment framework under the Water Convention as a "flexible, adaptable, framework".

²⁷ Global Nexus Secretariat (2020): Global Water, Energy and Food Nexus Principles, online https://uploads.water-energy-food.org/resources/nexus_principles_final_version_30-06-2020.pdf; cf. UNECE (2017): Deployment of Renewable Energy: The Water-Energy-Food-Ecosystems Nexus Approach, p. 10 f., online https://unece.org/DAM/energy/se/pdfs/gere/publ/2017/DeploymentOfRenewableEnergy_TheWaterEnergyFood.pdf.

²⁸ Global Nexus Secretariat (2020): Global Water, Energy and Food Nexus Principles, p. 2, online https://uploads.water-energy-food.org/resources/nexus_principles_final_version_30-06-2020.pdf.

²⁹ Cf. Global Nexus Secretariat (2020): Global Water, Energy and Food Nexus Principles, p. 2, online https://uploads.water-energy-food.org/resources/nexus_principles_final_version_30-06-2020.pdf.

³⁰ Zelli et al. (2020): Governing the Climate-Energy Nexus, p. 4, in: Zelli et al. (eds.), Governing the Climate-Energy Nexus, Cambridge University Press, Cambridge.

³¹ Cf. Boas et al., in: International Environment Agreements 2016, Vol. 16 (3), pp. 450 ff.

across SDGs was already on the agenda.³² Although the nexus approach has been applied and discussed most prominently with regard to environmental resources, nexus thinking is by no means limited to these policy fields.

Applying the nexus approach to the energy-climate-defence paradigm appears possible. In fact, there are already studies that consider at least two-node nexi of this paradigm: the energy-climate security nexus, energy-security nexus and the climate-security nexus. Before turning to these two-node nexi and then to the triple nexus of energy-climate-defence, however, it is necessary to consider the three components of this nexus: energy, climate and defence.

³² Cf. Boas et al., in: *International Environment Agreements* 2016, Vol. 16 (3), pp. 450 ff.

3 Energy security, climate security and defence

The nexus approach can be applied to a wide range of policy areas. Despite the already existing and well-established policy silos and sectoral considerations of these areas, the nexus approach must not omit a clear identification and definition of these areas examined for their interrelations, synergies and trade-offs. Part of the process of identifying these overlaps must first include an introduction of the existing policy areas, sectoral objectives and principles. This applies even more as there may be conflicting or competing goals in the areas themselves.

As second step of the nexus approach it is necessary to narrow down the central goal, the objective, of the nexus analysis. Synergies and multi-dimensional goals, benefits and trade-offs can only be identified against the background of a previously identified or defined common objective. As already mentioned, the nexus approach itself is not the objective. In fact, security is often placed at the centre of the nexus without further explanation.³³ In this case, neither the concept of security nor any of the underlying objectives are regularly differentiated.

An in-depth examination of a possible goal of the energy-climate-defence nexus will not be undertaken here. Rather, based on the previous approaches, security will be placed at the centre of the nexus approach and, consequently, a brief description of the areas will be given based on the overall objective of security. Accordingly, the following paragraph will shortly introduce the concepts of energy security, climate security and defence security.

On the one hand, such an approach shows the methodological difficulties of the nexus approach and the consequences of omitting relevant intermediate steps. On the other hand, however, this approach provides the possibility for further conceptual examination of the energy-climate-defence nexus.

3.1 Energy Security

The concept of energy security has recently become the focus of attention in the academic and public sphere. Despite the current use of the term, it is by no means uniformly defined. Energy security is regularly understood as the assurance of access by consumers to sufficient, affordable, and continuous supplies of energy resources. Energy security looks at both current and future demand.³⁴

However, the term has undergone numerous changes and reinterpretations since its introduction that is mostly related to the OPEC oil embargo of 1973.³⁵ Reason for continuing changes in the understanding of energy security is not only found in the different disciplines addressing the concept of energy

³³ Cf. on the role of security in the nexus approach Benson et al., in: *Water Alternatives* 2015, Vol. 8 (1), 768.

³⁴ See for a definition and further references Kalis (2024): *Energy Trilemma – Concept and Context in the Baltic Sea Region*, in: Kalis (ed.): *The Energy Trilemma in the Baltic Sea Region*, p. 21 ff., Routledge, London.

³⁵ Kalis (2024): *Energy Trilemma – Concept and Context in the Baltic Sea Region*, in: Kalis (ed.): *The Energy Trilemma in the Baltic Sea Region*, p. 21 ff., Routledge, London.

security, but in particular the strong context dependency of the concept itself.³⁶ Energy security has been and will always be understood and interpreted in the context of space, time and existing security threats.³⁷ Against this background, it is not surprising that the concept of energy security has recently been extended to include (dynamic) resilience and a more extensive focus on energy infrastructures.³⁸

It should also be noted that energy security is by no means the only goal of the energy sector. Rather, energy security may very well be in conflict with other goals of the energy sector.³⁹ This is particularly evident with regard to the decarbonisation of the energy system, the environmental impact of energy systems and questions of energy equity and justice. Even without an in-depth examination of the conflicting objectives and necessary trade-off decisions, it is already apparent here that a narrow focus on energy security at this stage of the defining the policy fields analysed within the nexus approach can lead to a significant narrowing in the application of this framework. Key aspects of the energy sector, energy transition policies and the objectives falling under them, as well as possible synergies or trade-offs with the other areas, would be neglected by this narrowing of the scope alone.

3.2 Climate Security

Climate security addresses issues of the direct and indirect impacts of global climate change on peace and security policies. The concept of climate security is based on the assumption that global climate change is a significant threat multiplier in the context of numerous conflicts, peace and security areas.⁴⁰ Although scientific evidence for this assumption still remains thin, the acknowledgement of climate change as threat multiplier has been at least well-established in international, European and national policy and respective grey literature.⁴¹ In fact, although the concept of the climate-security nexus is well-established and acknowledged in political institutions a general absence of scientific references and evidence-based assessments is evident.⁴²

³⁶ Sovacool/Saunders (2014), in: Energy Elsevier, Vol. 67, pp. 641-651; see for a definition of energy security within the energy and security nexus Pumphrey (2012): The Energy and Security Nexus. A strategic dilemma, p. 2 f., Strategic Studies Institute Book.

³⁷ Kalis (2024): Energy Trilemma – Concept and Context in the Baltic Sea Region, in: Kalis (ed.): The Energy Trilemma in the Baltic Sea Region, p. 21 ff., Routledge, London; cf. in consideration of the nexus approach King/Gulledge, in: The Fletcher forum of world affairs 2013, Vol. 37 (2), pp. 28 f.

³⁸ See World Energy Council (2024): Evolving with Resilience and Justice. World Energy Trilemma 2024, online <https://trilemma.worldenergy.org/reports/main/2023/World%20Energy%20Trilemma%20Index%202024.pdf>.

³⁹ Kalis (2024): Energy Trilemma – Concept and Context in the Baltic Sea Region, in: Kalis (ed.): The Energy Trilemma in the Baltic Sea Region, p. 21 ff., Routledge, London.

⁴⁰ See Consultative Group on International Agricultural Research (CGIAR) (2022), The Climate Security and Energy (Transition) Nexus: Winds of Change, CGIAR Focus Climate Security Position Paper Series, online <https://cgspace.cgiar.org/server/api/core/bitstreams/dc14acae-6364-4633-ae78-492a8f8239bb/content>; see for the first report to systematically analyse the climate-security nexus within the UNSC agenda Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States' Approaches to the Climate-Security Nexus, IFSH Research Report #005, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

⁴¹ See King/Gulledge, in: The Fletcher forum of world affairs 2013, Vol. 37 (2), pp. 25 – 44. King and Gulledge show that the concept of climate change as threat multiplier was introduced by grey literature, p. 29; cf. WBGU (2007): World in Transition, Climate Change as a National Security Threat, online http://www.wbgu.de/fileadmin/tem-plates/dateien/veroeffentlichungen/hauptgutachten/jg2007/wbgu_jg2007_kurz_engl.pdf; cf. COM (2019) 640 final.

⁴² Cf. Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States' Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 104 f., online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

The climate-security nexus stands for a multitude of topics and implications associated with climate change and security.⁴³ Due to this scope it is hardly possible to sufficiently frame this nexus. Indeed, due to these numerous interrelations some scholars contest the applicability of the nexus or demand scrutiny.⁴⁴ Notwithstanding this scrutiny, the impact of global climate change of relevant security areas becomes evident when applying the concept of “human security”.⁴⁵ Human security as an extended security concept, in contrast to the traditional understanding of security, does not focus on the protection of national security but on the protection of the individual, recognising human dignity.⁴⁶ Based on the effects of global climate change on numerous fundamental rights, freedom, conditions for freedom and living conditions in general, the security policy relevance of climate change becomes apparent. At the same time, however, it is apparent at this point that the classification of this policy segment as climate security itself fundamentally represents a two-nodes nexus, namely global climate change and climate change policies (both mitigation and adaptation) and (numerous) areas of security policy.

3.3 Defence

Defence may be considered as the most obvious policy area. It refers to the traditional approach to security addressing the concept of state security, closely related to national territories and military security.⁴⁷ This policy field is focussed on ministries of defence and the military, the so-called traditional security sector.⁴⁸

⁴³ Cf. Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States’ Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 16, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

⁴⁴ Cf. Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States’ Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 16, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

⁴⁵ Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States’ Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 12 f., online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf; cf. CGIAR) (2022), The Climate Security and Energy (Transition) Nexus: Winds of Change, CGIAR Focus Climate Security Position Paper Series, p. 8, online <https://cgspace.cgiar.org/server/api/core/bitstreams/dc14acae-6364-4633-ae78-492a8f8239bb/content>.

⁴⁶ Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States’ Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 12 f., online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

⁴⁷ Cf. Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States’ Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 12, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

⁴⁸ Cf. Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States’ Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 8, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

4 Two Nodes Nexi

Two-nodes nexi are also with regard to the policy areas of energy, climate and defence no novelty. Rather, studies of two-nodes nexus appear to be already well-established in the academic and policy debate in this context. At the same time, the debate is sometimes conceptually poorly founded, both with regard to the individual policy areas and the applied nexus approach. Indeed, numerous studies and contributions can be categorised as grey literature. Political application and scientific, conceptual discussions may become blurred in such a research context. The following brief introduction to the two-nodes nexus relevant here shall serve as a basis for expanding these or leading to a triple nexus of energy-climate-defence.

4.1 Energy-climate security nexus

The two-nodes nexus of energy and climate security, recognizes the threats climate change poses to energy systems, including reduced electricity generation capacity, water scarcity affecting thermal and hydropower plants as well as future hydrogen production, and the need for infrastructural resilience against extreme weather events.⁴⁹ Direct physical impacts of climate change on energy production, energy infrastructures and energy demand show growing attention.⁵⁰ Initiatives like the IEA's Nexus Forum⁵¹ and the EU's policy goals of pursuing energy security and mitigating climate change illustrate the intertwined objectives and the need for comprehensive strategies that incorporate climate considerations into energy planning.

4.2 Energy security and defence nexus

The energy and defence nexus, mostly referred to as the energy-security nexus, acknowledges the connections between the energy and security sectors.⁵² It addresses both, the environmental and geopolitical perspective of energy policy.⁵³ Mostly, the energy-security nexus is regarded as including climate targets in the context of energy supply and the geopolitics of the energy sector. The impacts and interrelations of these policies with security and defence policies is what many scholars refer to as the energy-security nexus. The interdependence of energy security and defence is highlighted by the EU's response to the energy crisis exacerbated by geopolitical conflicts, following the Russian invasion of

⁴⁹ Cf. CGIAR (2022), The Climate Security and Energy (Transition) Nexus: Winds of Change, CGIAR Focus Climate Security Position Paper Series, online <https://cgspace.cgiar.org/server/api/core/bitstreams/dc14acae-6364-4633-ae78-492a8f8239bb/content>.

⁵⁰ King/Gulledge, in: The Fletcher forum of world affairs 2013, Vol. 37 (2), pp. 33 f.; cf. Zelli et al. (2020): Governing the Climate-Energy Nexus, p. 4 ff., in: Zelli et al. (eds.), Governing the Climate-Energy Nexus, Cambridge University Press, Cambridge.

⁵¹ IEA (2013): The Forum on the Climate-Energy Security Nexus, online <https://iea.blob.core.windows.net/assets/imports/events/269/1.Hattori.pdf>.

⁵² See Kuzemko (2013): The Energy-Security Climate Nexus: Institutional Change in the UK and Beyond, Palgrave Macmillan, UK.

⁵³ Cf. Sivonen/Kivimaa (2024), in: Environmental Sociology, Vol. 10 (1), pp. 55-72.

Ukraine.⁵⁴ The EU's initiatives like Repower EU and Fit for 55 aim to balance energy security with climate goals, reflecting the broader strategic imperative to reduce reliance on fossil fuels and enhance renewable energy capacity. Additionally, maritime security, including energy infrastructure resilience, is integral part of the EU's Strategic Compass for Security and Defence.⁵⁵ At the same time the interrelations of energy and security are highlighted regarding the resilience of critical infrastructure, in face of the sabotage of the NordStream pipelines in the Baltic Sea.⁵⁶ In fact, in a study of the year 2023 the EU described critical energy infrastructure as the “achilles heel” of the military.⁵⁷ Pursuing a climate-neutral and resilient Energy Union must include a necessary balance between defence transition and operational effectiveness of the military.⁵⁸ Ukraine's potential role in this transition, given its rebuilding prospects post-conflict, underscores the geopolitical and economic dimensions of the nexus.

4.3 Climate Security and Defence nexus

The climate-security nexus recognizes climate change as a risk multiplier that exacerbates existing vulnerabilities, leading to displacement, social unrest, and conflicts.⁵⁹ Consequences of climate change may be severe for international, regional, national and sub-national stability in particular with regard to resource depletion, destruction of habitat and livelihood,⁶⁰ the exacerbation of social inequalities and the projection of new emerging resource conflicts and new geopolitical hotspots such as the Arctic Sea.⁶¹

Although there is still no official statement by the United Nations Security Council on the climate-security nexus a systemic analysis of discussions in the council has shown an increasing acknowledgment and understanding of the climate-security nexus among the members of the council. Under the term climate security, the nexus of climate and security and defence issues has been expressively addressed

⁵⁴ Cf. Sivonen/Kivimaa (2024), in: *Environmental Sociology*, Vol. 10 (1), pp. 55-72, who explore how governments have dealt with security concerns in the context of energy transition between 2006 and the events in 2022.

⁵⁵ EEAS (2022): *Strategic Compass for Security and Defence*, p. 22, online https://www.eeas.europa.eu/sites/default/files/documents/strategic_compass_en3_web.pdf.

⁵⁶ See on these and other security threats in the context of energy and security JRC (2023): *Fortifying Defence – Strengthening Critical Energy Infrastructure against Hybrid Threats*, online https://eda.europa.eu/docs/default-source/brochures/eda-jrc-study_web-version.pdf.

⁵⁷ JRC (2023): *Fortifying Defence – Strengthening Critical Energy Infrastructure against Hybrid Threats*, p. 9, online https://eda.europa.eu/docs/default-source/brochures/eda-jrc-study_web-version.pdf.

⁵⁸ JRC (2023): *Fortifying Defence – Strengthening Critical Energy Infrastructure against Hybrid Threats*, p. 11, online https://eda.europa.eu/docs/default-source/brochures/eda-jrc-study_web-version.pdf.

⁵⁹ Cf. COM(2019) 640 final; JOIN (2023) 19 final; see also CGIAR (2022), *The Climate Security and Energy (Transition) Nexus: Winds of Change*, CGIAR Focus Climate Security Position Paper Series, online <https://cgspace.cgiar.org/server/api/core/bitstreams/dc14acae-6364-4633-ae78-492a8f8239bb/content>; see for the concept of “climatization” of migration and security policy after the COP21, Maertens/Baillat (2017): *The partial climatization of migration, security and conflict*, in: Aykut et al. (eds.): *Globalising the Climate*, Routledge, London; JRC (2023): *Impacts of climate change on defence-related critical energy infrastructure*, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884.

⁶⁰ See for the multitude of perspective to consider when analysing climate security and the securitisation of the climate change debate, CGIAR (2022), *The Climate Security and Energy (Transition) Nexus: Winds of Change*, CGIAR Focus Climate Security Position Paper Series, p. 8, online <https://cgspace.cgiar.org/server/api/core/bitstreams/dc14acae-6364-4633-ae78-492a8f8239bb/content>.

⁶¹ Cf. CGIAR (2022), *The Climate Security and Energy (Transition) Nexus: Winds of Change*, CGIAR Focus Climate Security Position Paper Series, p. 8, online <https://cgspace.cgiar.org/server/api/core/bitstreams/dc14acae-6364-4633-ae78-492a8f8239bb/content>.

in several UN institutions.⁶² The importance of climate-security in these sense within the UN additionally becomes apparent in the creation of the UN Group of Friends on Climate Security⁶³ and the Climate Security Mechanism⁶⁴.

In its first study of its kind the Joint Research Council of the European Union speaks of climate change as increasingly shaping the security landscape, including defence.⁶⁵ The EU acknowledges global climate change as a threat multiplier with serious implications for EU's security and defence.⁶⁶ This is also highlighted in the EU Climate Change and Defence Roadmap.⁶⁷ This Roadmap is an integral part of the European Green Deal and aims to connect climate and security policy within the European Union.⁶⁸ Additionally, the EU's integration of the climate, peace, and security nexus into its external policies and NATO's Climate Change and Security Action Plan further illustrate the growing acknowledgment of climate change's security implications. These initiatives aim to enhance awareness, promote adaptation, reduce emissions, and foster collaboration with other actors in the climate security space. This nexus demands that climate change adaptation and mitigation “are implemented across all military branches” including “planning, operations, training”, but also “decisions on capabilities, investment and procurement”.⁶⁹

⁶² See UNEP (2011): Liveliness Security. Climate Change, Migration and Conflict in the Sahel, online https://postconflict.unep.ch/publications/UNEP_Sahel_EN.pdf; UNDP (2019): Why does the UN focus on climate-related security risks?, online: <https://www.undp.org/content/undp/en/home/blog/2019/why-does-the-un-focus-on-climate-related-security-risks-.html>; see also Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States' Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 6, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

⁶³ The UN Group of Friends on Climate Security has been introduced in 2018 by Germany and the island state of Nauru. See for a list of participating states <https://www.diplomatie.gouv.fr/en/french-foreign-policy/france-and-the-united-nations/multilateralism-a-principle-of-action-for-france/alliance-for-multilateralism/article/the-climate-and-security-initiative#:~:text=The%2048%20members%20of%20the,%2C%20Namibia%2C%20Chad%2C%20Niger%2C>.

⁶⁴ The Climate Security Mechanism (CSM) is a joint initiative between the UN Department of Political and Peacebuilding Affairs (DPPA), the UN Development Programme (UNDP) and the UN Environment Programme (UNEP), introduced in 2018. See for an overview DDPA (2020): Climate Security Mechanism – Toolbox, online https://dppa.un.org/sites/default/files/csm_toolbox-1-briefing_note.pdf.

⁶⁵ JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884, p. 3.

⁶⁶ Cf. JOIN (2023) 19 final.

⁶⁷ EEAS (2022): The EU's Climate Change and Defence Roadmap – Addressing the implications of climate change for security and defence, online <https://www.eeas.europa.eu/sites/default/files/documents/2022-03-28-ClimateDefence-new-Layout.pdf>.

⁶⁸ EEAS (2022): The EU's Climate Change and Defence Roadmap – Addressing the implications of climate change for security and defence, online <https://www.eeas.europa.eu/sites/default/files/documents/2022-03-28-ClimateDefence-new-Layout.pdf>.

⁶⁹ JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884, p. 3.

5 Multi-Nodes nexus

The preceding descriptions show that, despite criticism of the conceptual basis of the nexus approach, both the nexus approach itself and the two-node nexi in the field of energy, climate, security are well-established. At the same time, the brief introductions to these two-node nexi show the lack of depth of the analyses with regard to the conceptual debate and the development of an assessment framework. In addition to a lack of definitions and major objectives, the lack of conceptual clarity and scope of the nexus examined is particularly clear. This is particularly evident in the context of the energy-security nexus. Here, the systemic and conceptual boundaries between issues of global climate change, climate mitigation and adaptation policy, energy policy in the broader sense and security are blurred.

This lack of clarity leads to weaknesses in the application of the nexus approach and ambiguities in the analyses. However, it also raises the legitimate question of whether a multi-node, rather than a two-node nexus has not already been introduced with the energy-security nexus.⁷⁰ There is some evidence that the relevant studies essentially bring together the policy fields of energy, climate and defence here, despite the lack of linguistic clarity and missing or fuzzy definitions.⁷¹

These studies and the merging of the climate-security and energy-climate nexus are the cornerstone for the conceptual development of the triple nexus of energy-climate-defence. Based on the findings of the nexus approach studies, the existing assessment frameworks and principles, the findings from the two-nodes nexi and, in particular, the energy-security nexus, a first definition of the energy-climate-defence nexus is provided below. At the same time, an initial outline of an assessment framework and thus the development of key cornerstones of a more extensive investigation and research framework for this triple nexus will be established. Additionally, initial benefits and challenges of the nexus approach for the energy-climate-defence nexus will be identified.

In their joint communication the European Parliament and the Council, although referring to the climate-security nexus, acknowledge the linkages between climate change, peace and security.⁷² Following this communication, climate policies within the European Union should be seen conflict-sensitive, while at the same time climate change should be mainstreamed into the European security policies.⁷³ The European Parliament and the Council understand the green energy transition as being part of this nexus.⁷⁴ This joint communication and the study on impacts of climate change on defence-related critical energy infrastructure commissioned under the Consultation Forum for Sustainable Energy in the

⁷⁰ Cf. Sivonen/Kivimaa (2024), in: Environmental Sociology, Vol. 10 (1), pp. 55-72; cf. also CGIAR) (2022), The Climate Security and Energy (Transition) Nexus: Winds of Change, CGIAR Focus Climate Security Position Paper Series, online <https://cgspace.cgiar.org/server/api/core/bitstreams/dc14acae-6364-4633-ae78-492a8f8239bb/content>. In this position paper the authors address issues of global climate change as threat multiplier in consideration of both, energy transition and national security.

⁷¹ Cf. JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884. In this study the authors continuously switch terms from climate-energy-defence nexus to climate-security and even climate-energy nexus, pp. 1, 8, 57.

⁷² JOIN (2023), 19 final, p. 10.

⁷³ JOIN (2023), 19 final, p. 10.

⁷⁴ Cf. JOIN (2023), 19 final, p. 3.

Defence and Security⁷⁵ are essential steps towards the introduction of a energy-climate-security nexus and accompanying assessment framework.⁷⁶

5.1 Defining the energy-climate-defence-nexus

The energy-climate-defence nexus brings together three policy fields and their interrelations, synergies and trade-offs.⁷⁷ These are energy policy, global climate change and defence.⁷⁸

Energy policy here means the entire scope of energy policy and thus all the conflicting interests within it. Energy policy therefore already encompasses issues of energy security in the sense of security of supply. However, it also includes aspects of the energy transition, climate mitigation policy, energy equity and energy justice. Global climate change here refers to all relevant mitigation and adaptation policies in connection with global climate change. Overlaps with energy policy can already be identified here. However, the temporal and spatial scope is evidently expanded at the latest with the inclusion of global climate change as an independent policy field in the nexus. For example, global climate change raises questions within the nexus regarding global, international, transnational and intergenerational policies that might otherwise remain underexposed if energy policies alone were considered. The third policy field of defence addresses military infrastructure, capacity and policy.⁷⁹

The core objective and therefore common focal point of the three policies in the nexus analysis is security.⁸⁰ Despite different definitions and dimensions of security⁸¹ within the three policy fields, they can be brought together here under a minimal consensus on the concept of security. Security can be understood here as the absence of dangers and unacceptable risks and the capacity of the system to persist, adapt and transform through such dangers and risks. Understood in this way, a concept of security and resilience becomes the focus of the nexus approach.⁸² Putting security in the centre of this

⁷⁵ The Forum is a European Commission initiative managed by the European Defence Agency to assist the European Union Ministries of Defence to move towards green, resilient, and efficient energy models.

⁷⁶ Following Milazzo these documents fall short of acknowledging the existing strategic and security risks, Milazzo (2023): The Nexus Approach: bringing together climate, human security, and demographic change in times of permacrisis, European Policy Centre Discussion Paper, p. 6, online https://www.epc.eu/content/PDF/2023/Nexus_DP_v2.pdf.

⁷⁷ Cf. JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884.

⁷⁸ Cf. JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884.

⁷⁹ Cf. JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884. The authors of the study do not introduce any definition of the policy fields within the nexus but rather start their analysis with the impacts of climate change of defence.

⁸⁰ Cf. Benson et al., in: Water Alternatives 2015, Vol. 8 (1), 768. The authors conclude that enhancing the nexus approach interrelates with strongly stressing security; Hardt and Viehoff speak of security as being “at the core of our conception of the world” and “critical to central existential values of utmost importance, priority and protection”, Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States’ Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 12, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf; cf. JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884. The authors set sustainability and resilience as main objective of their nexus analysis, p. 11.

⁸¹ See Buzan et al. (1998): Security: A new framework for analysis, Lynne Rienner Publishers: Boulder, London.

⁸² See for the role of resilience within the nexus of energy-climate-defence JRC (2023): Fortifying Defence – Strengthening Critical Energy Infrastructure against Hybrid Threats, p. 18, online <https://eda.europa.eu/docs/default->

nexus assessment will raise concerns on an increasing securitisation of policy. In fact, some scholars have previously criticised the concept of climate-security and the securitisation of climate change, questioning whether this will lead to an inadequate application of security policy and security measures in climate change policy.⁸³ Although such a militarisation or securitisation has not yet been detected with regard to the climate-security nexus,⁸⁴ these concerns of bringing together divergent policy fields and measures must be kept in mind when applying the energy-climate-defence nexus.

5.2 Applying the nexus assessment framework on the energy-climate-defence-nexus

After introducing the key definitions of the energy-climate-defence nexus this paper turns to the application of the nexus assessment framework on this new emergent nexus. As mentioned above, this paper does not aim at analysing the energy-climate-defence nexus within a certain region or other scope but rather to introduce the concept and cornerstones for an assessment. Such an assessment can be based on the experience of well-established frameworks like the water-energy-food nexus under the Water Convention.

The nexus assessment developed under the Water Convention is based upon a six-step process, consisting of the (1) identification the current conditions and the socioeconomic context, the (2) identification of key sectors and stakeholders to be included in the assessment, the (3) analysis of these key sectors, the (4) identification of intersectoral issues, linkages and other interrelations, the (5) so-called nexus dialogue, and (6) the identification of synergetic actions and related benefits.⁸⁵ Regularly this process is divided into desk-research (step 1, 2, and 3) and the active engagement of stakeholders (step 4, 5, and 6).⁸⁶ Looking at this second division it becomes obvious that the nexus approach is a highly participatory process.⁸⁷ In consequence of this, the nexus approach goes hand in hand with a systemic change from outcome based planning to output oriented thinking. As such a thinking process the nexus approach is neither about shifting resources between the applied policy fields nor about replacing existing analytical frameworks and (sectoral) policies. Rather the nexus approach shall provide complementarity and strategic foresight in the context of the relevant linkages of policies. The nexus approach

[source/brochures/eda-jrc-study_web-version.pdf](#); see also JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884. The authors set sustainability and resilience as main objective of their nexus analysis, p. 11.

⁸³ Brozka, in: S&F Sicherheit und Frieden 2009, Vol. 27 (3), pp. 137-145.

⁸⁴ Hardt/Viehoff (2020): A Climate for Change in the UN Security Council? Member States' Approaches to the Climate-Security Nexus, IFSH Research Report #005, p. 105, online https://ifsh.de/file/publication/Research_Report/005/200818_IFSH_Research_Report_005_01.pdf.

⁸⁵ Cf. UNECE (2017): Deployment of Renewable Energy: The Water-Energy-Food-Ecosystems Nexus Approach, p. 10, online https://unece.org/DAM/energy/se/pdfs/gere/publ/2017/DeploymentOfRenewableEnergy_TheWaterEnergyFood.pdf; see for a good overview of the assessment framework also UNECE (2021): A nexus approach to transboundary cooperation, p. 6, online https://unece.org/sites/default/files/2021-01/ece_mp.wat_none_12_SummaryBrochure_Nexus_Final-rev2_forWEB.pdf.

⁸⁶ Cf. UNECE (2017): Deployment of Renewable Energy: The Water-Energy-Food-Ecosystems Nexus Approach, p. 10, online https://unece.org/DAM/energy/se/pdfs/gere/publ/2017/DeploymentOfRenewableEnergy_TheWaterEnergyFood.pdf.

⁸⁷ Cf. UNECE (2017): Deployment of Renewable Energy: The Water-Energy-Food-Ecosystems Nexus Approach, online https://unece.org/DAM/energy/se/pdfs/gere/publ/2017/DeploymentOfRenewableEnergy_TheWaterEnergyFood.pdf.

is expected to lead to clear (holistic) strategies and visions which will enhance resilience and avoid the current reactive mode.⁸⁸ One of the key pillars of the nexus approach is to improve coordination potential and to identify strategic priorities across areas.⁸⁹ Regularly nexus solutions encompass five categories, institutional solutions, informational solutions, instrumental solutions, infrastructural solutions and international coordination and cooperation.⁹⁰ Based on the design of the nexus approach and the described framework analysis of nexi are expected to be interdisciplinary.⁹¹

In addition to this assessment framework and the key cornerstones of the nexus approach the water-energy-food nexus introduced several principles for the application of the framework. These include among others the equitable and balanced weighting of interests within the nexus, the focus on vulnerability, the commitment to international agendas and goals, the enhancing of data exchange, cross-departmental and multi-sectoral cooperation and communication, the capacity development for nexus assessment and the inclusive and participatory design of the nexus approach.⁹²

5.3 The energy-climate-defence nexus in the European Union

The European Union is at the forefront of the emerging concept of the energy-climate-defence nexus. Both, the joint communication of the European Parliament and the Council as well as the first study on impacts of climate change on defence-related issues are first steps towards the introduction and application of the energy-climate-defence nexus within the European Union and beyond. Being a pioneer of change in this regard the question remains in how far the joint communication and study follow the aforementioned assessment framework for the nexus approach.

It becomes evident that neither the joint communication nor the study intends to introduce the energy-climate-defence nexus with great rigor. Both fall short to properly define the relevant policy fields and to outline the applied assessment framework in particular with regard to the existing framework under the Water Convention. In fact, although the study commissioned by the Consultation Forum for Sustainable Energy in the Defence and Security is of significant importance for the introduction of the energy-climate-defence nexus in policy and academia, several steps of the assessment framework under the nexus approach remain unnoticed. This includes the identification of the current conditions and the socioeconomic context and the identification of key sectors and stakeholders as well as the nexus dialogue among these stakeholders. Additionally, identification of intersectoral issues, linkages and other interrelations remain superficial, not only because of the fuzzy definitions applied in the study, but also since the study is reduced on desk-research and feedback of some

⁸⁸ Cf. Milazzo (2023): The Nexus Approach: bringing together climate, human security, and demographic change in times of permacrisis, European Policy Centre Discussion Paper, p. 7, online https://www.epc.eu/content/PDF/2023/Nexus_DP_v2.pdf.

⁸⁹ Milazzo (2023): The Nexus Approach: bringing together climate, human security, and demographic change in times of permacrisis, European Policy Centre Discussion Paper, p. 5, online https://www.epc.eu/content/PDF/2023/Nexus_DP_v2.pdf.

⁹⁰ UNECE (2021): A nexus approach to transboundary cooperation, p. 11, online https://unece.org/sites/default/files/2021-01/ece_mp.wat_none_12_SummaryBrochure_Nexus_Final-rev2_forWEB.pdf.

⁹¹ King/Gulledge, in: The Fletcher forum of world affairs 2013, Vol. 37 (2), pp. 39 f.

⁹² Cf. Global Nexus Secretariat (2020): Global Water, Energy and Food Nexus Principles, online https://uploads.water-energy-food.org/resources/nexus_principles_final_version_30-06-2020.pdf.

ministries of defence.⁹³ Although parts of the nexus assessment are applicable for desk-research,⁹⁴ the major strength of the nexus approach lies within its participatory, inter- and transdisciplinary design. An analysis limited to desk-research and the involvement of ministries of defence neither meets the requirements of a nexus assessment nor does such a study contribute significantly to holistic solutions in the nexus. Rather, this scope and study design are rooted in sectoral thinking. With this in mind, the aforementioned study can be but a first step towards a comprehensive nexus assessment of the energy-climate-defence nexus in the European Union and beyond.

Notwithstanding this conceptual criticism both, the joint communication and study may very well introduce and lay out the future framework for the assessment of the energy-climate-defence nexus. This becomes particularly evident when looking at the recommendations within the study and the announcement in the joint communication. In the joint communication the European Parliament and the Council point to informed planning, decision-making and implementation.⁹⁵ They emphasize data exchange, evidence-based analysis and foresight as well as other forms of informational solutions within the nexus approach.⁹⁶ This includes, among other, the development of an integrated knowledge hub, the Climate and Environment Security Data and Analysis Hub, the introduction of an annual comprehensive trend analysis, the expansion of the existing global conflict risk index and the development of a short-term and sub-national conflict risk model.⁹⁷ Additionally, the joint communication addresses the operationalisation of the nexus and the role of international cooperation.⁹⁸ The authors of the study on the impacts of climate change on defence-related issues recommend, among others, the development of an EU Defence Strategy on Climate Change, the development to a strategic framework for critical energy infrastructures and the introduction of a multi-stakeholder forum.⁹⁹

⁹³ JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884, p. 1.

⁹⁴ Cf. UNECE (2017): Deployment of Renewable Energy: The Water-Energy-Food-Ecosystems Nexus Approach, p. 10, online https://unece.org/DAM/energy/se/pdfs/gere/publ/2017/DeploymentOfRenewableEnergy_TheWaterEnergyFood.pdf.

⁹⁵ JOIN (2023), 19 final, p. 4.

⁹⁶ Cf. JOIN (2023), 19 final, pp. 4 f.

⁹⁷ Cf. JOIN (2023), 19 final, pp. 5 ff.

⁹⁸ Cf. JOIN (2023), 19 final, pp. 8 f., 18 f.

⁹⁹ JRC (2023): Impacts of climate change on defence-related critical energy infrastructure, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/03454, JRC130884, p. 7.

6 Conclusion - Towards energy-climate-defence nexus?

Despite their shortcomings, in particular with regard to introducing concepts and assessment frameworks, these documents lay out the design for developing a comprehensive framework for the energy-climate-defence nexus within the European Union. Indeed, the current assessment and design lacks conceptual rigor and an intensive engagement with the existing nexus assessment and principles under the Water Convention. And yet, these first steps may be regarded as starting points for a participatory learning process towards the energy-climate-defence nexus. The further development of this nexus and of assessment frameworks within the European Union and beyond is necessary to identify existing interrelationships between energy, climate and defence and to contribute effectively to holistic solutions.