



The Energy Transition Shaping the World Order: Russia and Finland's Geopolitical Positioning

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11.1 INTRODUCTION

In recent years, Finland's security environment has undergone a substantial transformation. The border between Finland and Russia is the external border of NATO and the EU, but it is also a significant divide in energy geopolitics. A return to the pre-war era in relation to Russia is not a viable prospect. Before 2022, the dominant strategy was to address Russia's unpredictability by aiming to maintain friendly relations and energy collaboration, for example, via electricity trade, new energy developments and fossil fuel imports (Kivimaa and Sivonen, 2024). However, today, Finland has ceased to import Russian fossil fuels and electricity, and it is highly likely that this will be a permanent shift. In terms of energy geopolitics, Finland is in a favourable position to adapt its energy system to the new geopolitical situation, as it is estimated that Finland belongs to the winners in the energy transition (Smith Stegen, 2018; Overland, 2019). Moreover, the share of renewable energy in total consumption is steadily growing and the share of fossil fuels is decreasing. Thus, the energy transition can change Finland's geopolitical profile from energy importer to energy exporter. In the long term, clean energy technologies will create new opportunities for carbon dioxide and hydrogen economies.

The energy transition from fossil fuels to the cleaner and renewable energy will inevitably shape the world order. Indeed, a low carbon world may not necessarily be less conflictual than one dominated by fossil fuels (Bazilian et al., 2020; Sovacool et al., 2023). As the world invests almost twice as much in clean energy as it does in fossil fuels (IEA, 2024a), the geographic and technical characteristics of renewable energy systems are fundamentally different from those of coal, oil and natural gas. This has implications for interstate energy relations and will require early attention if states are to exploit opportunities and address challenges (Scholten et al., 2020; Siddi, 2023). Every country

has some form of renewable potential it can harness, thereby enhancing its energy resilience, independence and control and reducing exposure to volatile fossil fuel prices. Consequently, new trade flows in electricity, hydrogen and clean technologies will emerge, differing significantly from traditional fossil fuel dependencies (IRENA, 2024).

The complex interplay of the speed and direction of the energy transition will depend greatly on how countries strategize regarding the energy transition. Countries can either embrace renewables for energy security and industrial reasons or stall the fossil fuel endgame and prepare to cope with its implications (Overland et al., 2019). Current US policy seems to rely on fossil energy, while China is the leading investor in the field of renewable energy. Though the long-term viability of the Russian fossil society is highly uncertain, it is intent on prolonging the era of fossil energy as far into the future as is feasible (Tynkkynen, 2024).

To serve its interests, Russia seeks to shape the global order and it uses the concept of multipolarity as a foreign policy tool for managing its geopolitical interests. Russia perceives security policy to be a zero-sum game and considers the victory of another to be synonymous with its own defeat (Mikkola and Pynnöniemi, 2016). The risk of Russia acting aggressively is felt most strongly by countries next to it. From Russia's perspective, ensuring its own security requires ensuring military hegemony in the neighbouring area and keeping the neighbouring countries in a militarily vulnerable position vis-à-vis Russia. The sovereignty of neighbouring nations or their security interests are not a factor in Russia's calculations (The Finnish Defence Forces, 2025). Thus, Finland's geographical location largely determines its geopolitical position, which is also sensitive to changes in energy geopolitics.

This article increases the understanding on energy geopolitics and geopolitical implications of renewables. The aim of the article is to examine Finland's geopolitical positioning in a context that combines the geopolitics of the energy transition and Russia's view of the world order. The focus is not on Finland's geopolitical position per se, but rather on the act of positioning for the future. The article is structured as follows. First, the theoretical and conceptual approach is presented (Section 2). Then, drawing upon the research literature on the geopolitics of the energy transition, a contextual framework for the geopolitical dynamics of the energy transition is established. In addition, the impact of the hydrogen economy on geopolitics is also addressed (Section 3).

The analysis section of the article starts with an examination of the Russian worldview, focusing on multipolarity and Russia's ignorance of the energy transition. Here, the use of multipolarity as an explanation for current global events is challenged. Rather than presenting an alternative explanation for the world order, the emphasis is placed on the necessity of comprehending the energy transition shaping it (Section 4). Following this, the focus of the article is shifted towards Finland, where its geopolitical positioning is analysed through strategic documents to clarify how the Finnish decision-making system perceives the energy transition from a geopolitical and geoeconomic

perspective (Section 5). Finally, in the conclusions section, the findings from the earlier sections are combined (Section 6).

11.2 THEORETICAL AND CONCEPTUAL APPROACH

In this article, the approach adopted is based on poststructuralism and is constructive in nature, providing a lens to critically examine social practices, language and ideological influences (Bryman, 2016). The energy transition, Russia's perspective on the global order and Finland's geopolitical position are social constructs, the foundations of which are the discourses that justify them. The approach of this article is built on critical geopolitics, within which discourse analysis assumes an instrumental role (e.g., Dalby, 1991; Ó Tuathail, 1996; Müller, 2008). Critical geopolitics understands geography in international politics as socially constructed and bound to larger questions regarding identity or difference, for instance. It scrutinises national identity-building and the associated spatial practices of politico-spatial inclusion and exclusion. Additionally, it points out that political subjectivities, identities and objects are formed in geopolitical action and within discourses (Moisio, 2015). By representing discourses, those who use them, consciously or unconsciously, construct their position and identity. The statements of a head of state are geopolitical acts and they socially construct the world in the desired or undesired direction.

This article explores and interprets how the geopolitical ambitions are reflected in various textual contexts. To analyse the Russian view of the world order, the statements and publications of Russian state leaders are referred to. In the analysis of Finnish geopolitical positioning, three strategic documents published by the Government of Finland are utilised as research material. The analysis incorporates the Government report on Finnish foreign and security policy (Ministry for Foreign Affairs of Finland, 2024), the Government Defence Report (Ministry of Defence, Finland, 2024) and the Industrial Policy Strategy (Ministry of Economic Affairs and Employment, 2024).

As a term, geopolitics can have many different meanings depending upon whom it is used by. According to a classic definition, geopolitics is the study of how the projection of a varied kind of power is effected and affected by the geographic and political landscape in which it operates (Kelly, 2016). In the research on the geopolitics of renewable energy, geopolitics is understood to denote the influence of geography on the power of states and international affairs. This geopolitical perspective emphasises the strategic importance of natural resources, their location, transportation routes and chokepoints (Overland, 2019). In addition, the term *geo-economics* is used while recognising that economic influence is, in fact, an integral dimension of geopolitical power. As the boundaries between geopolitics and *geo-economics* are often blurred, this complicates their conceptual delineation. Both terms focus on nation states and their actions to project power beyond their borders. Since

political power and economic power are intimately tied, geopolitical considerations often result in the deployment of typical geoeconomic instruments, such as sanctions or investment controls (Quitow and Zabanova, 2025).

In this article, the energy transition will be addressed in general terms, without detailed elaboration of its various dimensions. Primarily, it is a sociotechnical response to mitigating climate change. For instance, it is recognised that justice and ecological issues have a great importance in the energy transition. However, this article focuses only on the geopolitical dimension. In addressing Finland's geopolitical positioning in the energy transition, the focus is on the security-policy-related strengths and weaknesses of the deployment of renewable energy on Finnish territory. The Finnish-Russian border is regarded as a geopolitical variable, the conditions of which have changed considerably since 2022. The border is defined by significant divergences, which are further reinforced by the geopolitical dynamics of the region. In the context of energy issues, the term crowded-out border has been employed to denote the circumstance in which the placement of Finnish wind farms is hindered by the surveillance needs of the Finnish Defence Forces in the border region (Fischhendler, 2024).

In the analysis of the Russian worldview, the concept of multipolarity is an easy-to-understand concept, around which one's geopolitical logic can be constructed (Waltz, 2000; Bunde et al., 2025). Multipolarity is a geopolitical imagination with a complex connection, for instance, to nuclear weapons, conventional military capabilities and economic resources. In recent decades, the dominant narrative on the evolution of the global order has been that the world has moved from Cold War bipolarity to US-led unipolarity. After this, there have been suggestions, particularly from Russia, that the world is facing multipolarity. This discourse on multipolarity will be analysed in the present article.

11.3 ENERGY TRANSITION RESHAPES THE TRADE AND DEPENDENCIES

In this section, a framework is established to illustrate the geopolitical dynamics of the energy transition with a particular focus on the EU, with Finland as a member state. Furthermore, emphasis is placed on the emerging hydrogen future and its geopolitical implications. Currently, the energy transition is having a profound impact on energy geopolitics. This change is characterised by shifts in the nature, volume and location of trade and investment flows, as well as the dependencies among nations. Thus, it is evident that this provides new opportunities and challenges for the energy security and industrial strategies of countries (Scholten, 2023; Siddi, 2023; Barragan-Contreras et al., 2025).

The question of whether geopolitics accelerates or slows down the energy transition is a subject that has been the focus of considerable research in recent times. The results of this research indicate that, depending on the context,

both outcomes are possible (e.g., Ben Cheikh and Ben Zaid, 2024; Blondeel et al., 2024; Heras, 2024). One example is the price of oil, often influenced by geopolitical developments, which is evidently linked to the progression of the energy transition. In more developed economies, the response to oil price shocks has been to accelerate the transition to renewable energy sources. However, resource-rich countries subject to the resource curse, such as Russia, have a lower speed of renewable uptake (e.g., Esmacili et al., 2024; Magazzino and Giolli, 2024).

11.3.1 The EU Creating Energy Sovereignty

The war in Ukraine was a strong catalyst for the shift to the geopoliticisation of EU policy priorities. It shifted from a focus on broad multilateral co-operation to more narrowly defined strategic partnerships with like-minded Western and neighbouring countries (e.g., Marhold, 2023; Siddi and Prandin, 2023; Jerzyniak, 2024). Generally, it is estimated that the EU finds itself in a more advantageous geopolitical position within a context dominated by non-fossil energy sources. Nevertheless, the increasing interdependence with China necessitates consideration during a period of intensified great power competition (Giuli and Oberthür, 2023). There are also cautions not to increase a reliance on raw materials and to lock in investments in fossil fuel infrastructure while partnering with other warmonger and dictatorial states (Vezzoni, 2023).

Thanks to the REPowerEU Plan, launched in May 2022, the EU has dropped its share of Russian oil and gas imports. Consequently, in a period of 5 years, Europe has doubled its investment in renewable energy, but it has not reduced its dependence enough on Russian energy (IEA, 2024a). It is even suggested that the EU choices may have inadvertently created favourable conditions for Russia's invasion of Ukraine (Cataldi et al., 2024). In May 2025, the European Commission presented a roadmap to ensure the EU fully ends its dependency on Russian energy while ensuring stable energy supplies and prices across the EU (European Commission, 2025). However, the implementation of this is not self-evident, as the unity of the EU has been fractured in relation to Russia and the policy of the USA towards Europe has clearly changed.

Whilst there are numerous expressions of concern regarding the status of EU energy and trade policy, there are also favourable observations concerning Europe's accomplishments. A reminder of this is the progress that Europe has made in energy security and environmental issues which was unthinkable just a few years ago. When the war in Ukraine began, the effectiveness of Russia's energy weapon against Europe proved to be only temporary. In less than 3 years, Europe pivoted to cleaner and more secure energy sources (Lomax et al., 2025). Europe's strong response has demonstrated that an accelerated energy transition is possible amid strong political and economic headwinds when backed by a broad popular consensus (Bergmann et al., 2024). Former Finnish ambassador to Russia and the USA, Mikko Hautala, has highlighted that despite the close energy ties between Finland and Russia, Russia did not

possess an effective energy weapon against Finland (Hautala, 2024). However, it is important to acknowledge that in recent years, the primary focus of Russia has been on the territory of Ukraine, where there has been considerable damage to its energy infrastructure.

There have been relevant calls for increasing attention to geopolitical or security concerns in the energy transition. Indeed, there should be more dialogue between actors working in the fields of energy policy, national security and foreign policy as this could help in advancing the credibility and comprehensiveness of anticipating energy futures (Höysniemi, 2022). However, an improved policy interplay between energy transition, defence and security policies requires institutional change. One part of such an institutional change should be redefining what energy security means in the context of a new kind of decarbonised energy regime (Kivimaa, 2024). However, Finland has a relatively effective government-led model of ‘comprehensive security’ which could serve as a missed platform for institutional co-operation (The Security Committee, 2025).

11.3.2 The Geopolitical Implications of the Hydrogen Economy

The transition from a hydrocarbon economy to a hydrogen economy would have significant geopolitical and geoeconomic consequences, but the timing and extent of the effects are still uncertain (IRENA, 2024). It is anticipated that the dynamics of future hydrogen markets would be similar to today’s natural gas markets—with the potential for similar geopolitical dynamics (Pflugmann and De Blasio, 2020). The geopolitical implications of hydrogen include technological competition, dependencies and asymmetrical relationships, likely exporters and importers, new trade relationships and transportation routes and value chains. Green hydrogen and products derived from it could play an important role in energy security (Smith Stegen et al., 2023; IRENA, 2024).

Finnish industry has a particular strength in the field of bio-based carbon dioxide, a key component of the green hydrogen economy. The term ‘green hydrogen’ refers to an energy carrier that is produced with water electrolysis based on clean electricity from renewable energy sources. The utilisation of carbon dioxide has the potential to create substantial added value. Due to the large production of bio-based carbon dioxide, it is predicted that Finland could become a significant exporter of e-kerosene (Arasto et al., 2024). By combining green hydrogen with bio-based carbon dioxide, e-kerosene suitable for aviation is produced. Gasgrid Finland, the operator of the Finnish gas transmission system, is actively developing hydrogen infrastructure domestically and in collaboration with Nordic and Baltic partners. Nevertheless, despite the potential of the hydrogen economy to enhance Finland’s geoeconomic strength, the question of its geopolitical success remains unresolved. In the Nordics, only in Denmark do exports of renewable hydrogen and its derivatives feature as a clear policy goal (Kilpeläinen et al., 2023). In addition to the necessary infrastructure, capital and technology for the deployment of hydrogen, a strong

political will is required to exploit the opportunities presented by the hydrogen economy to gain geopolitical power.

In its hydrogen strategy, the EU strives to stimulate the roll out of production and use of hydrogen, and build a concrete pipeline of projects (European Commission, 2020). The EU and many of its member states view hydrogen as essential to their climate goals, industrial competitiveness and energy security (Quitow and Zabanova, 2024). Moreover, international governance and investments to scale up hydrogen value chains could reduce the risk of market fragmentation, carbon lock-in and intensified geo-economic rivalry (Van de Graaf et al., 2020).

To become a global leader in renewable hydrogen, co-operation among the EU member states is required. The EU can achieve this only by working together, and active diplomacy will be needed to prevent Europe from being overtaken by other nations and slipping into new dependencies (Nuñez-Jimenez and De Blasio, 2022; Behr, 2023). The transition to hydrogen economy is likely to shift and complicate Europe's external dependence rather than eliminate it. Therefore, the role of supply chains will become more important. Resource distribution, production potential, current geopolitical power dynamics, and their interplay will influence hydrogen policy and decision-making along the entire value chain, with actors often giving priority to socioeconomic, geopolitical and technopolitical considerations (Pepe et al., 2023a).

11.4 THE RUSSIAN WORLDVIEW AND THE SHAPING GLOBAL ORDER

The analytical section of this article begins with an examination of Russia's conception of the world order, which is based on multipolarity. Then the discussion will proceed to the idea that rather than considering polarities, it would be more beneficial to approach the global order by addressing the inevitable global phenomena and the role of the energy transition in responding to these challenges. In addition to Russia, the section brings in the perspectives of China and the USA as they have different approaches towards the energy transition.

11.4.1 *Multipolarity as a Russian Foreign Policy Tool*

Russia has been pushing the concept of multipolarity for almost 30 years. Former Foreign and Prime Minister Yevgeny Primakov can be considered the initiator of Russian concept of multipolarity. In the so-called Primakov doctrine (Rumer, 2019; Pynnöniemi and Mikkola, 2021), China, India and Russia create a counterbalance to the USA. In 1997, Russia and China issued to the United Nations a Russian-Chinese Joint Declaration on a Multipolar World and the Establishment of a New International Order (UN, 1997). This was promoted by the then Russian Ambassador to the UN, Sergei Lavrov, who is still in charge as the minister for foreign affairs.

President Vladimir Putin has repeatedly declared a multipolar future in his speeches. As an example, he stated in 2012 in the *Krasnaya Zvezda* newspaper:

'The world cannot be unipolar, it can only be multipolar. It will become stable if all members of the international community adhere to the fundamental principles and standards of International law.' (Mikkola, 2014, 18). In the contemporary world, it is easy to prove this statement false. First, Russia, among many others, has not followed the principles of international law and, second, the world has not become more stable if multipolarisation has progressed. More recently, in 2024, at a meeting of the Shanghai Cooperation Organization, which along with the BRICS¹ is one of the organisations that Russia uses as an instrument for promoting multipolarity, Putin stated that multipolarity is now a reality (Tass.ru, 2024a). A recent confirmation of the Russian way of thinking was given by former Putin adviser and ideologist Vladislav Surkov, in which he states that multipolarity is good for foreign policy but not for domestic policy (L'Express, 2025).

The Munich Security Conference paper in 2025 stated that while the extent to which the world is already multipolar is debatable, multipolarisation is a fact (Bunde et al., 2025). However, the concept of multipolarity can be challenged by asking the following questions: What makes a pole? How is polarity measured? What are the poles of a multipolar world order and how many should there be? When can a state call itself a pole? What happens when multipolarity is achieved? The responses to such questions are challenging and, in line with the realist school of international relations, should reflect on geopolitical and geoeconomic power in terms of both quantitative and qualitative measures. For example, based on the number of nuclear weapons globally, the world could be found to be bipolar (the USA and Russia), as well as demographically (India and China) (Bunde et al., 2025).

Nevertheless, in terms of military spending, the world has one pole. While the US share of capabilities among major powers has dropped, it is still by far the most powerful state. If China maintains its rise, the next system is likely to be bipolar (Røren, 2024). In geoeconomic terms, the USA is the world's leading geoeconomic power, although it falls far short of being in a hegemonic position. Its lead over the second-largest geoeconomic power, the EU, has grown in recent years. However, China's geoeconomic power has expanded rapidly, almost matching that of the EU in 2022 (Christie et al., 2025). It can be concluded that, depending on the perspective adopted, the world order may be characterised by unipolarity, bipolarity or multipolarity. This has the effect of reducing the evidential value of the concept of polarities as a perception of the global order.

It has also been suggested that the world is entering a period of 'unbalanced multipolarity' (Ashford and Cooper, 2023; Zvezdanović Lobanova and Nikolić, 2024), but one might ask whether it would be multipolar at all. The definition assumes that multipolarity would be balanced as such. The idea of the balance of power in the realist school of international political theory fitted

¹ BRICS is an intergovernmental organisation comprising ten countries – Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Indonesia, Iran and the United Arab Emirates.

into a bipolar world. In a multipolar world, it is improbable that the global community would reach a consensus that poles are now in balance and no longer competing for influence. Competition remains the source of power struggles between states. Indeed, the competitive setup between the poles makes multipolarity more unpredictable than unipolarity or bipolarity.

The motivation behind Russia's efforts to encourage multipolarisation is that a unipolar or bipolar world would not guarantee Russia a position as a dominant power, as the USA and China have already occupied those positions in many respects. Russia knows that nuclear weapons are the only serious tools it can use to blackmail other major powers. As the use of nuclear weapons is difficult, Russia uses the perception of the world order to serve its own interests—not only against major powers but also against smaller countries. For Russia, multipolarity is a socially constructed instrument that is employed to promote national interests and increase influence in regions considered to be within its sphere of interest. The concept is therefore a source of concern for neighbouring countries.

By starting wars and conflicts, Russia seeks to regain the geopolitical voice and position as one of the poles, the position it lost following the dissolution of the Soviet Union. This is evidenced by a statement of one of the closest advisers to Putin, Nikolai Patrushev, who said in January 2025 that negotiations on Ukraine should be conducted between Russia and the USA, excluding other Western countries. According to Patrushev, there is nothing to talk about with London and Brussels (Baranov, 2025). As Russia wishes to be seen as an equal to the USA and in the Russian concept of multipolarity, there is no room for Europe. Hence, multipolarity can be defined as a form of neo-realistic strategic deception presented as a stabilising force, through which the Russian government seeks to convince the international community of the growth of its own influence.

11.4.2 The Energy Transition Does Not Follow the Traditional World Order Perception

The redistribution of geopolitical power is being caused by global heating, biodiversity loss and digitalisation, with the energy transition being just one policy response to these phenomena. It is inevitable that these factors will be given due consideration by all, irrespective of whether one perceives itself to be one of the world's poles. Those who respond effectively to these phenomena are likely to succeed in the long run in shaping the world order (Scholten, 2018; Smith Stegen, 2018). Energy and raw materials will remain a central component in the great power equation, in particular as the energy transition is also an industrial-technological revolution promising enormous potential gains if one manages to leverage it for geopolitical aims (Pepe et al., 2023b). This development has been recently seen in the Ukraine–US mineral deal or the discussion on the governance of Greenland (Læggaard, 2025).

The main geopolitical powers seem to take different approaches toward the energy transition and the differences have implications for the geopolitical power. The USA would have the potential to lead the global transition to renewable energy, as it has some of the best wind, solar, geothermal, hydro and biomass resources in the world (IEA, 2024b). However, it seems that the Trump administration is currently prioritising fossil fuel production. In contrast, China is investing most heavily in renewable energy production, almost twice as much as the USA (IEA, 2024a). Thus, in the global geopolitics of the energy transition, China will have an active and determinant role through its predominant role in both the fossil and non-fossil energy systems. In principle, the energy transition enables China to escape the constraints imposed by existing energy dependencies, although it does not remove geopolitics from its energy system and introduces new dependencies (Freeman, 2023).

In Russia, hydrocarbons have been the economic source of its military power and it desires to continue the era of oil as long as possible. The oil and gas industry has enabled Russian to have a state of imperialism (Tynkkynen, 2024). A confirmation of this was heard in 2023, when president Putin stated at the BRICS meeting that there is no alternative to hydrocarbons in the foreseeable future (Interfax.ru, 2023). However, Russia is probably aware of its own lock-ins of fostering the energy transition. In 2024, President Putin used deceptive discourse in a sense that actually Russia is committed in a just and sustainable energy transition while western countries use the climate agenda to promote their neo-colonial interests (Tass.ru, 2024b). This reflects Russian energy disinformation which lays the groundwork for and enhances its potential active deployment of energy assets as instruments of power (Paličková and Černoč, 2024).

Compared to other major powers, Russia looks like a passive bystander and the repercussions will be near catastrophic for Russia's ability to control its security, production, finance and knowledge structures which is the worst-case scenario for Russia itself. From this point of view, the prolongation of the status quo does not constitute an option. The global energy transition presents a wide spectrum of challenges and amounts to an existential threat to the country (Proedrou, 2023). On the other hand, it is suggested that Russia's occupation of mineral-rich territories in Ukraine suggests a broader strategy to sustain its influence in a post-fossil fuel world (Baranowski et al., 2025). However, in the absence of a shift in the Russian regime's current approach, it is unlikely that there will be a substantive effort to implement the energy transition in Russia. The administration and the distribution of power are based on the revenue generated by fossil fuel exports. Any attempt to modify this arrangement would carry significant risks for the existing power structures. Consequently, Russia perceives itself to be capable of maintaining its current state of affairs, disregarding both the energy transition and climate change. It is reasonable to hypothesise that this will result in a weakening of geopolitical power in the international relations.

11.5 THE CONSTRUCTION OF FINLAND'S GEOPOLITICAL POSITIONING IN THE ENERGY TRANSITION

The following discussion will proceed to examine how Finland will officially position itself in terms of geopolitical considerations in the energy transition. The three strategic documents are analysed in terms of how they deal with Finland's geopolitical position and what they say about strategic decision-making regarding geopolitics in the energy transition context. More clearly, the discourses referring to energy geopolitics are identified and interpreted. The analysis incorporates the Government report on Finnish foreign and security policy (Ministry for Foreign Affairs of Finland, 2024), the Government Defence Report (Ministry of Defence, Finland, 2024) and the Industrial Policy Strategy (Ministry of Economic Affairs and Employment, 2024).

In the Finnish strategic documents, the geopolitical discourses in the energy transition framework can be classified roughly into two categories. The rapidly changing global geopolitical situation and Finland's location as a neighbour to Russia are overarching topics. The geoeconomic discourses focus on global competition and the EU's and Finland's possibilities to diversify the critical value chains. These are closely linked with the energy transition which is dependent on both issues.

11.5.1 Geostrategic Location and Energy Geopolitics

The foreign and security policy report and the defence report present Finland's security environment as a challenge. In the aftermath of Russian invasion of Ukraine, Finland's security environment has changed fundamentally and in the long term. The operating environment is changing rapidly and it is difficult to predict. In Northern Europe, the accession of Finland and Sweden to NATO is reshuffling the strategic landscape and Finland foresees that the Russian military will strengthen its western borders as soon as the situation in Ukraine allows this to happen. Finland's geographic location is mentioned in many contexts to be challenging and strategically significant. The Baltic Sea and the Arctic region form a unified geostrategic area, also in terms of military strategy. Regarding natural resources, the Arctic region is considered an area of strategic competition due to increased exploitation opportunities (Ministry of Defence, Finland, 2024; Ministry for Foreign Affairs of Finland, 2024).

The industrial policy strategy is as aware of the geopolitical situation. Finland must find a balance in its relations with the superpowers between related commercial and foreign and security policy interests. Regarding its geographical location, there is a clear logistical and competitive disadvantage for Finland due to its remoteness from markets in Central Europe and Asia. In this context, the Baltic Sea is of key importance to Finland's international accessibility and foreign trade (Ministry of Economic Affairs and Employment, 2024). These issues have the potential to impact Finland's geopolitical risk perception among

investors, which in turn could influence clean energy investments, for which uncertainty is particularly harmful.

The foreign and security policy report identifies the implications of the emerging dynamics of energy geopolitics. Phasing out fossil energy will shape global power and economic relations and create internal pressures in countries dependent on income from fossil energy exports. This will be characterised by increasing strategic competition between the USA and China which are in the dominant political, military, economic and technological position in the world. The control of critical technologies and raw materials is determining geopolitics to an increasing extent, and economic dependencies are more often seen as vulnerabilities. Consequently, businesses also need to examine their activities from the perspective of the strategic interests of states. Competition over natural resources, including critical minerals and water, is a major cause of local conflicts, and may lead to changes in the global power relations. Moreover, illegal trade in natural resources is a source of funding for armed factions and organised crime (Ministry for Foreign Affairs of Finland, 2024).

As the climate and sustainability issues are the key drivers in energy transition, it is important to note that the foreign and security policy report mentions that the effects of Russia's war of aggression are also reflected in achieving sustainable development goals. The world is currently facing the shared challenge of a triple planetary crisis. Climate change, biodiversity loss and pollution have both direct and indirect effects on Finland's security. Among other things, they affect food production and food security, access to water, energy transition, security of supply, the incidence of diseases and, consequently, the security environment (Ministry for Foreign Affairs of Finland, 2024).

The defence report acknowledges the tension between energy transition and defence capability. Energy transition will be taken into account in the development of the logistics and support network and in the capability development of the Finnish Defence Forces. Nevertheless, the report admits that a controlled transition towards carbon neutrality will be a challenge for homeland defence and it will not be giving up fossil fuels for a long time. The report underlines several times that, due to energy transition, Finland's defence capability will not be endangered and no compromises will be made. This also includes the management of environmental risks, the prevention of environmental damage and efforts to advance wind-power construction. Indeed, wind farm placement has an impact on territorial surveillance, the communication and command systems of the Defence Forces and on the usability of exercise areas (Ministry of Defence, Finland, 2024).

11.5.2 Value Chains Defining the Future

The industrial policy strategy summarises the interplay of geopolitics, geoeconomics and industrial policy. These three elements become increasingly connected and global value chains become more block-specific, within which the different stages of the value chain are located. Competition for investment is

also linked in many ways to the geoeconomic struggle, the means of which include tariffs, trade restrictions, export subsidies, market access requirements, strategic ownerships and the creation of interdependencies. Russia's invasion of Ukraine has further underlined the importance of access to raw materials and the functioning of supply chains (Ministry of Economic Affairs and Employment, 2024).

As the foreign and security policy report states, with the rise of economic power politics, trade policy has become a part of the security policy toolkit. Growing tensions have led to increased restrictions on international trade and investments and to the favouring of domestic production (Ministry for Foreign Affairs of Finland, 2024). Similarly, the industrial policy strategy states that the competition between the major powers is manifested in problems with the international trade rules system and the blocking of the global economy, with the role of critical raw materials and disruptive technologies as a key strategic asset being highlighted. Moreover, the industrial policy strategy could foresee the US tariff policy, stating that president Trump is expected to increase protectionist industrial policy measures, such as import tariffs on products produced outside the USA (Ministry of Economic Affairs and Employment, 2024).

The importance of the value chains is widely dealt with in Finnish strategic documents. The industrial policy strategy points out that China has systematically sought to strengthen its self-sufficiency, especially in sectors of strategic importance to itself, such as technology and the green transition (Ministry of Economic Affairs and Employment, 2024). The foreign and security policy report notes China's aims of controlling critical production and supply chains which pose a challenge to Finland and Europe. Though China will remain an important trading partner for Finland in the future, Finland must be aware of the growing risks, prepare for them and prevent them. To strengthen its societal resilience and prevent inappropriate attempts to exert influence, Finland aims to reduce its economic, technological and industrial dependence on China. Measures to protect critical technologies, diversify production and supply chains of raw materials and reduce critical dependencies are necessary (Ministry for Foreign Affairs of Finland, 2024). The realisation of clean transition² industrial investments are often dependent on investments in other parts of the value chain. Indeed, investing in renewable energy will be challenging if there is not enough demand for electricity. Furthermore, investing in green hydrogen plants is challenging without cheap electricity and binding off-take contracts (Ministry of Economic Affairs and Employment, 2024).

The industrial policy strategy foresees export potential for Finland in the clean transition, albeit with the caveat that significant investment capital would be required. Finland's strength lies in the potential to increase the production of clean electricity to meet the growing needs of industry, with the battery value chain and clean hydrogen two examples of potential growth sectors. Through sustainable and high value-added use of raw materials, Finland can improve its

² The terms clean transition and green transition are slightly politicized in the Finnish political atmosphere and the industrial policy strategy uses consistently the term 'clean transition'.

industrial competitiveness. This applies to both forests and mineral resources, where Finland's reserves have also been identified in the EU's strategic autonomy plans. The demand for critical minerals from European industry will allow Finland to create more high value-added activities. Furthermore, the processing of biobased materials can also be increased by investing in the development of substitutes for fossil raw materials and rare minerals, and in long-life wood products (Ministry of Economic Affairs and Employment, 2024).

From Finland's perspective, technological competition forces smaller countries and businesses to choose between Western and Chinese markets, even though such differentiation is not in their best interests (Ministry for Foreign Affairs of Finland, 2024). For a small country like Finland, this means adaptation (Ministry of Economic Affairs and Employment, 2024). The defence report highlights technological issues and states that it will be important to strengthen the EU's strategic autonomy in security and defence and to reduce harmful dependencies. In this context, it also refers to critical technologies and technology policy, thus new technologies may revolutionise both warfare and the planning and development of capabilities (Ministry of Defence, Finland, 2024).

11.5.3 The Main Findings of the Analysis

An analysis of the Finnish strategic documents reveals that the energy transition is framed as a geopolitical and security concern. The documents recognise the energy transition as a transformative geopolitical force. The most prominent actors of reshaping global competition are the USA and China. As all Nordic countries are now members of NATO, they form a unified geostrategic region which will create potential also in energy issues. The Finnish strategic documents also highlight the increasing convergence of geopolitics, geoeconomics and energy policy. The energy transition is also linked to national defence, and the message is clear: Finland's defence capability must not be compromised. In this regard, we can see some progress from the conclusion that the ministries of defence and foreign affairs in Finland are not involved in the coordination of climate and energy policy (Kivimaa, 2024). After Kivimaa's findings, this analysis shows that different government departments are now paying more attention to this issue.

There is a broad consensus on the necessity to reduce strategic dependencies, particularly in relation to China, in areas such as technology, critical minerals and supply chains. Finland has identified the clean energy and green technologies sector as a strategic economic opportunity. Investment in clean electricity, hydrogen and the battery value chain is regarded as a means to strengthen Finland's industrial base, contribute to the EU's strategic autonomy and enhance export potential. However, these opportunities are not explicitly linked to enhancing Finland's geopolitical position. Despite an acknowledgement of the various potential dimensions, the Finnish strategic documents fail to address the ways in which Finland's geopolitical position will be shaped,

nor the potential for enhancement in the context of the energy transition. Furthermore, the documents do not address Finland's perspective on emerging issues related to the energy transition, such as data centres and mining.

11.6 CONCLUSIONS

The impact of the energy transition on international relations and global competition is a multifaceted phenomenon. In contradistinction to the former energy paradigm characterised by the utilisation of fossil fuels, the energy transition underlines a country's ability and willingness to exploit renewable resources. The correlation between natural resources and geopolitical tensions over territory is a matter of increasing significance in the context of the energy transition. In addition to the consideration of domestic natural resources, the technological dimension of the energy transition compels nations to extend their focus beyond their own borders. Moreover, when resources are required, the pertinent questions are: from whom can they be obtained, and what will be the cost? The intentions of the USA and China will play a fundamental role in these dynamics. It is challenging for small states to defend their sovereignty against the geopolitical rivalries of dominant powers, particularly when those rivalries are focused on smaller states' territories.

The basis of Russia's power is rooted in the structures of fossil energy. The maintenance of these structures is a deliberate strategy employed by the Russian administration to ensure its survival. By this logic, the energy transition is not an issue in Russia, and therefore Russia's future is dependent on the continued utilisation of fossil fuels. To maintain its position, Russia, like other countries, should address climate change and environmental issues in the long term. However, there is currently not much evidence to suggest that this will happen. Russia continues to promote the concept of multipolarity as a means of misleading the international community from its ambitions in regions it perceives to be within its sphere of interest. To ensure the sovereignty of smaller states, it is essential to comprehensively understand the motivation behind Russian perception of the global order. Consequently, it is not useful for Russia's neighbouring countries to repeat the Russian agenda of a multipolar world.

The metaphor 'Finland is an island' is rooted in the country's geographical characteristics, particularly its extensive land border with Russia, which, due to security concerns, cannot be utilised for various purposes. Hence, over 90% of Finland's foreign trade is transported by sea. Regarding the energy transition, Finland's status as an island is set to become increasingly apparent in the future since energy flows between Russia and Finland have been cut off. The flow of logistics and energy is facilitated by the Baltic Sea or by land to the Nordic countries, which collectively form a geostrategic entity. Therefore, it is vital that the region is developed towards shared goals in the future, particularly in terms of energy logistics and industrial co-operation. This will ensure the region's energy security, which is essential for its geopolitical stability.

In the context of the EU's efforts to terminate its trade in fossil energy with Russia, Finland is proactively addressing the energy transition from the perspective of its security policy. It is plausible that Finland has permanently ceased to import Russian fossil energy. Simultaneously, Finland is proactively engaged in the development of renewable energy production. Indeed, Finland has identified opportunities in the domain of hydrogen infrastructure and emerging technologies, with particular emphasis on e-fuels derived from hydrogen and bio-based carbon dioxide. The strategic importance of this issue is evident, and a decisive policy could result in Finland becoming an energy exporter. This development should also be considered as an act to gain geopolitical power. The strategic benefits of this approach are evident, as it would enhance Finland's global attractiveness, thereby providing it with a stronger position to resist Russian influence in its energy policy. Thus, to harness this potential, a clear pathway must be established. This may necessitate a prioritisation amongst investment projects that utilise clean electricity.

For the foreseeable future, Finland is reliant on fossil fuels to meet its security and defence capability requirements. Nevertheless, it is beneficial for Finland to promote the renewable energy system in all feasible ways. The enhanced connectivity of Finland within the European renewable energy market fosters a greater degree of autonomy from Russia. Moreover, it offers a protective barrier against geopolitical turbulence on a global scale, a factor which, for instance, can influence the value chains and the cost of imported energy. As evidenced by the events in Ukraine, Russia is employing military force and cyber-attacks against critical infrastructure, including the energy, logistics and food production systems. It is reasonable to hypothesise that Russia will act similarly in the future. Consequently, as a neighbouring state to Russia, Finland's energy system, based on renewables, must be resistant to war. This approach is applicable throughout Europe.

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