

Transition from Hydrocarbon Geopolitics to Critical Mineral Geopolitics

Ali Fuat GÖKÇE¹

Abstract

Geopolitical analysis considers factors beyond a state's geographical location, such as climate, topography, demographic structure, natural resources, country size, and technological advancement. In the 20th century, natural resource ownership and control became crucial to geopolitical analysis and policymaking. In recent years, the need for clean energy has become more prominent due to the negative effects of climate change. Developing technology and increasing populations have led to a greater demand for energy. Transformation is necessary to differentiate between energy systems that rely on clean technologies and hydro-carbon energy sources. This study will discuss the transition process from hydro-carbon energy to geopolitics based on critical minerals required for sustainable climate and clean energy, its reasons, and the current reflections of the future geopolitical struggle. Descriptive and historical research methods were used in this study. As a result of the study, it was determined that there may be changes in the geopolitical struggle depending on energy.



1. Assoc. Prof. Dr., Gaziantep University,
afgokce@antep.edu.tr,
<https://orcid.org/0000-0002-6484-8305>

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1. INTRODUCTION

When formulating policies, nations and powers with ambitions of global dominance prioritize economic advantages and their sustainability. This approach is rooted in imperialistic ideology and seeks to satisfy the raw material needs of the imperialist state. The economic goal is to access cost-effective labor, energy, and underground and surface resources to sustain industry and ensure long-term security.

Imperialist countries implement extensive policies spanning over 40 or 50 years to achieve their goals, prioritizing research and development activities.

The utilization of developing technology and information systems is imperative in this process.

At this point, the question becomes essential: "Can there be a change in the field of geopolitical struggle with the developing technology?" In order to answer this question, it is necessary to examine developments in energy fields and technology. Currently, countries and regions that have affordable labor, abundant natural resources, and energy have become significant. Once these locations are identified, efforts are made to establish political connections with them.

Various methods may be employed when political relations cannot be developed through cooperation and mutual agreement. These methods can include using force, such as overthrowing the political power through a coup or applying economic and political sanctions. Another approach is supporting the opposition in changing the ruling power democratically. Additionally, some may attempt to exploit ethnic and religious differences in the target country to create chaos and make it vulnerable to international intervention.

It is essential to recognize that each region has unique characteristics that affect its geopolitical value. Factors such as geographical location, natural resources, and workforce contribute to this value. However, the significance of each region is not fixed and may change with the development of new technologies. Imperialist countries adapted their policies accordingly to capitalize on these changes.

Historically, countries and cities connected by trade routes on land and sea held significant geopolitical importance. However, as industrialization relied heavily on hydro-carbon energy, countries with abundant energy resources became politically significant. In recent years, the focus has shifted towards climate and energy security, emphasizing the need for clean energy transformations. As a result, the minerals required for clean energy technologies and the locations that possess them are now part of a new geopolitical equation. Unfortunately, imperialist nations have already begun developing policies for extracting, processing, acquiring, and maintaining these crucial minerals.

This study seeks to explore whether geopolitical equations and policies change based on technological development and the need for raw materials. The primary issue is that with technological advancements, the demand for resources increases, leading to imperialist states devising their geopolitical strategies based on the underground resources of other countries. In certain cases, this approach has negative consequences for the countries that possess these resources.

The aim of this study is to examine the efforts of imperialist countries to shape their geopolitical plans through critical minerals. Specifically, we will explore the transition from current hydro-carbon energy-based policies to those based on critical minerals required for sustainable climate and access to clean energy in the 2040-2050s. We will discuss the reasons for this shift and potential geopolitical implications.

The study is expected to contribute to science by showing how developing technologies change the fields of geopolitical struggle.

Descriptive and historical research methods were used in this study. Firstly, the theoretical part and definitions will be explained. After introducing the study's theoretical framework, this analysis will investigate the 2022 National Security Strategy Document of the United States and the International Energy Agency's (IEA) report from March 2022. The relationship between these reports and contemporary international relations regarding cause and effect will be discussed.

2. CONCEPTS: GEOPOLITICS, GEOSTRATEGY, NATIONAL POWER AND ITS ELEMENTS

Geopolitics was first introduced in the 19th century by Rudolf Kjellen, a Swedish political scientist (Aron, 2003, p. 191). However, its roots can be traced back to ancient Greek philosophers such as Herodotus (485-425), Platon (427-347), Aristotle (384-322), and Strabo (B.C.63-B.C.24). Aristotle argued that climatic conditions influenced the political landscape of Greek city-states and empires, this was also emphasized by Immanuel Kant during the Renaissance in France (Scholvin, 2016, p. 8). Although scientific geography was incorporated into political and international relations since the 15th century, Kjellen's use of the term "geopolitics" in an article about Switzerland's borders and the relationship between diplomacy and military service popularized the term (Yılmaz, 2015, pp. 201-248).

The concept of geopolitics originates from the Greek words "geo" and "politeia," which mean land and politics, respectively (Evan and Newnham, 1998, p.2). While there is no universally agreed definition, it refers to the branch of science that examines the relationship between a state's geographical location and political situation. Geopolitics considers factors such as a country's climate structure, proximity to seas and oceans, access to transportation routes and important junctions, distance to significant power centers, and conflict zones in world politics (Doster, 2017, pp. 83-110). Additionally, the concept evaluates a country's geographical structure regarding military operations. However, a country's geographical location alone cannot ensure foreign policy success. National power elements are also considered when forming policy alongside the country's geography. Geography is a crucial component of federal power. To better understand this, examining the various elements of national power and the corresponding approaches is essential.

According to Bayat (1986, pp. 61-86), The elements of national power are “military power, economic power, demographic power, scientific and technological power, and psycho-social and

cultural power. There are different approaches to the elements of national power. While the General Staff of the Republic of Turkey stated that the elements of national power consist of "political, military, economic and socio-cultural" issues, the United States International Relations Commission stated that it consists of "Diplomacy, natural resources, armed forces, population, geography, technology, national unity."

In his book "The Relations of Nations," Frederick H. Hartman (1983, p. 26) identified various aspects contributing to a nation's power, including demography, geography, economy, science and technology, history, psychological and sociological situation, administration and organization, and military strength.

Similarly, in his book "Politics Among Nations," Hans J. Morgenthau (1967, p. 33) listed the elements of national power: geography, industrial capacity, natural resources, military preparedness, population, national character, national morale, diplomacy, and government effectiveness.

Numerous examples of the elements of national power can be provided. However, they all cover similar subjects under different categories. As a result, it is appropriate to analyze the factors of national power through the concepts of "Force" and "Power."

When referring to national power, every component that contributes to it must possess the qualities of being a "power." Along with having a powerful attribute, each component must be actively engaged, not in a passive or potential state.

Based on the explanations provided, we can identify various types of power, such as geographical power for a country, democratic power for a nation, and political power for an administration. Additionally, we can consider military, economic, science and technology, psychosocial, and cultural power, which reflect the state's ability to fulfill essential functions and uphold the nation's spiritual values.

Various theories throughout history have influenced geopolitics. Mackinder and Spykman are two significant figures who made statements and developed theories regarding geopolitics during World War II and the Cold War (Fettweis, 2015, p. 235). British scholar Mackinder focused on heartland theory. According to Mackinder, whoever conquers Eastern Europe gains control of the Heartland - the central region of the Eurasian continent. The one who dominates the Heartland then gains control of the entire World Island and, ultimately, the world. According to Mackinder's theory, some countries and regions have undergone significant industrialization and development. This region possesses an extensive array of natural resources, particularly hydrocarbon energy, which unequivocally and substantially contribute to the global economy (Clover, 1999, pp. 8-10).

Nicholas Spykman's "Rimland Theory" (1942, p. 43) emphasizes that the security of the USA should be prioritized over geographical factors. The most effective way to control Mackinder's Central region, according to Spykman, is by holding rimland." Spykman emphasizes the concept of a rimland

consisting of three sections: the European Coastland, the Arab-Middle Eastern Desert land, and the Asiatic Monsoon Land. Spykman's theory solely emphasizes a nation's security and vital geographical positions to uphold it. This encompasses the domination of the essential raw materials required for an imperial state, mainly the natural resources in these areas.

American Admiral Alfred Thayer Mahan developed the "Naval Power" theory in his book, "The Influence of Sea Power." It posits that whoever dominates the seas will achieve global dominance. Mahan believed that naval power was superior to land power. With strong naval capabilities, nations like the USA, England, and Japan would have an advantage over nations like the Soviet Union and China, which were more focused on land power (Mahan, 1987, pp.1-23).

Geostrategy is critical to any country's political interests, particularly its foreign policy, as it is determined based on geographical conditions. The primary objective of geostrategy is to safeguard the country's interests in specific trade routes, strategic nodes, rivers, islands, and seas. Frederick L. Schuman first introduced this concept in his article "Let Us Learn Our Geopolitics" in 1942 (Schuman, 1942, pp.348-360). When deciding on their geostrategy, countries must consider the current state of their national power elements. Specific strategies may not be feasible if there are any shortcomings or weaknesses in some of these elements. On the other hand, in line with the state's geostrategic policies, military, political, and economic power elements must be re-planned and put into action. Military power must be tailored to the current geopolitical and geostrategic situation, while financial activities and trade should be determined based on the geopolitical situation.

It is crucial to acknowledge that every state has a geostrategy. However, military power alone is inadequate for achieving strategic goals. One cannot become a great power without it. Nations must develop their geopolitical approaches to be global actors. After the Cold War, the United States employed Spykman's "Rimland Theory" to form alliances and encircle the Soviet Union while simultaneously building up significant naval forces by Mahan's "Sea Domination" theory. Germany and Russia, being land states, focused on developing robust land armies and strategies based on MacKinder's "Heartland Theory". Meanwhile, England strengthened its naval forces to maintain its dominance in colonial areas.

In addition to military power, it is imperative to have economic, social, cultural, demographic, and technological power. Such capabilities enable states to impose their desired policies. However, the adoption of any policy is a controversial issue. Although the dominant global powers do not always do what they want, they prevent any action that does not suit their interests. This issue ultimately determines whether a state will become a global or regional power (Keegan, 1993, pp. 341-345).

States typically resort to military force only as a last option. Military power is commonly utilized as a means of deterrence. As global powers exert their geostrategic policies on other nations, they also employ tactics such as soft power elements, perception management, proxy wars, psychological warfare,

and asymmetric warfare methods, in addition to their military forces. All these efforts aim to establish hegemony on the other side and obtain the necessary aspects for the state's survival. These include energy resources, rich raw materials, and consensual seizure and retention of markets. Access to and control of energy, raw materials, and markets is insufficient. Inspection and safety of transport routes are also essential components to be considered (Keegan, 1993, pp. 352-357).

States must collectively consider geostrategy, geopolitics, and geoeconomics to achieve their global interests. The primary concern is safeguarding economic interests and implementing policies to achieve this. Therefore, while developing appropriate policies within their geography, states must also devise policies in other regions to ensure a sustainable economy. The availability of raw materials influences states' policies on industry, technology, and energy. Countries may use their resources and establish diplomatic relations with nations with the required materials (Collins, 1998, pp. 60-75).

Sometimes, acquiring the necessary raw materials and maintaining good relations with the source country isn't enough to solve the problem. The safety of the raw materials during shipment and the chosen shipping route also become crucial factors to consider. More is needed to make agreements with the source country to ensure the safe and sustainable flow of goods. It's also important to consider the safety of the goods and the route they will take. To achieve this, states can develop policies alone. To handle such a situation, the state must harmonize strong economic, military, and political power. Additionally, there must be no interruptions in the supply of necessary raw materials for the elements of national power to be effective (Keegan, 1993, pp. 355-362).

In the current landscape of international relations, it appears challenging for a country to establish comprehensive global policies that safeguard its interests. This can be attributed to various factors, such as the evolution of global strategies, advancements in technology and cognition, and the abundance of information available. States often need to form alliances to achieve things they cannot accomplish independently. For instance, the USA's policies towards the Soviet Union emphasized the importance of containment, which involved creating comprehensive alliances based on the Border Belt theory. Similarly, the Soviet Union (and now Russia) has pursued policies to secure access to warm seas and maintain a robust naval presence in the Baltic and Mediterranean regions. Today, one of the most significant developments is the establishment of trade routes under China's "One Belt One Road" initiative, which highlights the importance of ensuring the safety and security of these routes.

3. CHANGES IN GEOPOLITICS

Geopolitics is constantly changing, affected by population movements, demographic shifts, and technological advancements. As a result, states must adapt their geostrategic approach to meet their evolving needs. States are adopting new policies and collaborating with others to ensure their national survival and effectively address defense issues. Economic factors will heavily influence the world in the future, and geopolitics will be crucial. Geopolitical changes are inevitable, including the shift from a

unipolar to a multipolar world, the rise of regional powers, terrorist threats, climate change and sustainable policies, regional dominance, and the resurgence of past conflicts. Technological advancements and their demands will also force changes in geopolitics.

Geopolitical theories differ according to the objectives that change among themselves in the process. In forming this difference, economic policies have been the primary decisive factor in the transition to the nation-state order. The hegemony of the states, which had strong land armies (Mongol, Russian, and Chinese Empire, Ottoman Empire, Austro-Hungarian Empire) until the 1600s before the nation-state, was influential in geopolitics. The discovery and development of sea routes have changed the power dynamic from land-based territories to the open ocean. This has led to a new aspect of colonialism, where economic dominance is more important than traditional land conquest and occupation. Hegemonic powers are exploiting the country's resources by collaborating with local powers. During colonial times, sea routes were primarily used to access raw materials. Using sea routes and maritime trade allowed access to distant areas. Mahan was inspired by the UK's maritime control and proposed the Rimland theory (Mahan, 1987, pp.1-23).

Since the beginning of the 20th century, ideological approaches have played a role in determining geopolitics and geoeconomic policies. The rise of industrialization and capitalism led to the emergence of workers' movements and socialist ideology. The Bolshevik Revolution in 1917 marked a significant shift in prioritizing ideology in state affairs. In response, capitalist nations began implementing measures to restrict the socialist world's reach and influence. Concurrently, the Heartland Theory emerged, emphasizing the territories formerly governed by traditional land-based states (Mackinder, 1962, p. 241).

Since the Cold War, the world has been split into two distinct ideological spheres: the bipolar world. This division has had lasting and irreversible effects on global politics and international relations. The USA's focus in the Middle East during the Cold War was primarily on oil and containing the Soviet Union. Today, it has come to the fore to prevent Russia from re-emerging as a hegemonic power in Europe. The USA's priority in the Middle East was controlling the oil, regardless of whether the countries in the region were democratic. The authoritarian or totalitarian regime type in power was insignificant as long as the existing regimes cooperated with the USA. The events in Afghanistan since the 1980s, as well as Middle Eastern countries' relations with the Soviet Union, led the USA to alter its strategy. As a result, the USA introduced the "Greater Middle East Project," intending to implement a policy called moderate Islam under the banner of democratization. However, the September 11, 2001, Twin Tower Attack gave the United States the opportunity it sought. The US claimed that it aimed to neutralize terrorist organizations in their locations, leading to an invasion of Iraq (Ari, 2006, pp.57-87).

Although Russia is the largest country in the world geographically, it does not have secure borders and exit corridors to ensure its strategic depth and global interests. However, with its oil and

incredible natural gas, it has succeeded in creating energy dependence on these countries with its agreements with the surrounding countries, especially the European countries. Russia's strategic approach of expanding its influence in warmer regions and energy policies have strengthened ties with Turkey. President Putin's proposal to transport natural gas to markets via Turkey, establishing it as a natural gas trade hub and key transit point, holds significant geopolitical importance for Russia. Installing nuclear power plants in Turkey and commercial and tourism agreements have brought the countries closer politically, but it has also made them economically interdependent. Russia's decision to access warm seas through the Baltic Sea led to the U.S. persuading Sweden and Finland to join NATO despite their long-standing neutrality policy.

China has become a major global player alongside the US and Russia. China prioritized its economy after gaining independence following two destructive wars in the 20th century. It utilized its population and abundant natural resources to rapidly develop while also pursuing a policy of exerting its influence through soft power and economic means in other regions (Van Beek, 2011, 390).

Thanks to the constructive policies it has pursued in Africa, China has accessed raw materials that are unavailable within its borders. The relationship between China and African countries is based on friendship, equality, mutual benefit, and shared prosperity, as well as mutual learning, support, and close coordination in political, economic, cultural, and international relations (Van Dijk, 2009, p.31).

4. FUTURE OF GEOPOLITICS

Changes in the global economy lead to shifts in geopolitical and geostrategic conditions. The economy's contraction or expansion impacts this change. With the world population rapidly increasing, there is a greater demand for resources such as food and energy. Additionally, population growth has led to an acceleration of urbanization. Urbanization rose from 15% in 1900 to 45% in 1990, then to 50% in 2000 (Yılmaz, 2017, pp. 163-188). Urbanization and increasing population have caused rapid consumption, especially in developed countries, and Western countries, which have about 20 percent of the world's population, have consumed 70 percent of their energy resources. Western countries unwilling to consume their energy resources have sought energy and raw materials in other geographies and have started using violence to reach them. Imperialist states have made the Middle East and Caucasus regions a focal point due to their abundance of oil and natural gas deposits. Additionally, the diverse demographic makeup of the regions, including various cultures, religions, and sects, and their location on migration routes have further facilitated these policies.

Over the past two centuries, humanity has experienced a significant transformation. As the global population continues to grow at an unprecedented rate, technological advancements have also changed how people think and behave as individuals and as a society. Nowadays, long-term strategies and policies have replaced the short-sighted ones that were once prevalent. While planning their futures, they have begun considering the issues that technology affects and contributes to. Many societies and

countries have started to formulate and implement long-term policies to ensure that their citizens' future is secured in terms of peace and prosperity. While technological advancements and industrialization have brought about numerous positive changes to human life, they have also had adverse effects on various aspects (Özer, 2016, pp. 137-157).

It is predicted that there will be unpredictable changes in human life in the next thirty or forty years. Three issues come to the fore in this change. These include climate change, globalization, and global inequality. Although it is impossible to address globalization and global inequality in terms of the subject and scope of the study, it can be examined from various dimensions. Climate change is emphasized as the first step in this study's geopolitical changes. Many factors cause climate change, but human activity is the primary cause. Climate change is caused by uncontrolled human activities, rapid population growth, and the measures taken to meet human needs and consumption (Kahraman and Şenol 2018, 353-370). Technological studies relieve people's basic needs, such as heating, nutrition, and shelter, and confront nature and people. The excessive consumption of natural resources and human activity have led to ecological crises, particularly global warming and climate change (Özer, 2016, pp. 137-157).

According to Taylor, Wiesenthal, and Aphrodite (2005, pp. 360-376), The initial effects of climate change are manifested through global warming. Human activities, mainly using hydrocarbon energy sources such as coal, increase greenhouse gas emissions, which in turn cause global warming. Carbon dioxide emissions are primarily responsible for this phenomenon. Although hydrocarbon energy sources are essential, they negatively affect the climate, ecosystems, and human health.

It is imperative to acknowledge that hydrocarbon energy production is a significant source of pollution and has contributed to ecological crises. Accordingly, environmentalist movements have raised concerns and scrutinized its impacts. The sustainable development movement aims to ensure that the environment is not negatively impacted during the developmental process and that natural resources are utilized responsibly. Unfortunately, the escalating demand for energy brought about by population growth, accidental consumption, and technological progress is hindering our progress toward this objective.

According to Özer (2016, p. 142), Energy consumption depends on each nation's development status and population size. Developing countries necessitate more power as they progress industrially, unlike developed nations. Additionally, energy costs rise in developing countries due to the inefficient utilization of energy compared to their developed counterparts and a limited energy supply. This ultimately places developing countries at a disadvantage in the global market due to the escalating energy expenses. It is crucial to address foreign dependency in energy policies for developing countries. Developing nations must actively pursue more substantial relationships with hydrocarbon energy-rich

countries to decrease this dependency. However, they must also be aware that this can have geopolitical implications and proceed cautiously.

It's imperative to acknowledge that developed countries have vastly different approaches to their energy resources. They refuse to use them and instead take control and use energy resources in other regions. This creates geopolitical equations and policies that often lead to domination and hegemony.

While hydrocarbon energy has caused global problems and conflicts, it has also contributed to global warming and climate change. According to Michael Klare, (2002, p. 304) "in the past, many wars were fought to possess natural resources. In the future, wars will be fought to possess hydrocarbon energy and water." Klare's statement indicates that the wars fought so far have been waged to secure access to hydrocarbon energy resources. The struggle for hydrocarbon energy is the primary cause of geopolitical conflicts in the hydrocarbon-rich regions of the Middle East, Africa, and South America. The Great Middle East Project aims to destabilize Arab countries such as Libya, Egypt, Iraq, and Syria. Similarly, global powers are struggling for control over hydrocarbon energy-rich South American countries, notably Venezuela. Additionally, colonial policies have been implemented in African countries with abundant natural resources, especially in the Sahel region. All of these actions are intended to eliminate energy dependence. Although policies are designed to meet the needs of developed countries' increasing population in connection with technology, excessive consumption causes ecological problems.

The impact of hydrocarbon energy on climate change and the threats to international security have compelled countries to look for alternative energy sources. However, it is essential to note that these two issues are not the only driving factors behind the search for different energy sources. Technological developments have led countries to explore other energy sources. As a result, sustainable and clean energy, energy security, and technological advancements have become critical factors in determining a country's energy mix. The effects of global crises on national economies and the growing concern over global warming, which is increasingly being felt, have compelled governments to take measures to reduce their reliance on hydrocarbon energy and instead shift towards more cost-effective, safer, cleaner, and eco-friendly sources of energy such as wind, solar, and geothermal power (Kakışım, 2022, p. 104).

Power plants and their capacity increase annually in countries that invest in renewable energy production and technology. Modern technologies related to renewable energy are rapidly becoming widespread. Electric vehicles have become a popular choice for public and urban transportation, in addition to personal vehicles.

The International Renewable Energy Agency's 2020 report on Global Energy Transformation predicts that by 2050, renewable energy sources such as wind and solar power will account for 66% of the world's total energy consumption and 86% of global electrical energy production. According to the

report, the transportation industry is projected to have 965 million electric vehicles, 57 million public vehicles, and 2.16 billion two and three-wheeled individual vehicles. In addition, the International Renewable Energy Agency (IRENA) has stated that the countries expected to have the most significant increase in renewable energy consumption include the People's Republic of China (67%), India (73%), the USA (63%), and the EU (73%), which consists of 27 member states (International Renewable Energy Agency Report, 2020)

According to BloombergNEF's New Energy Outlook 2020 report, investments in the energy sector are now primarily focusing on renewable energy and related technologies, The report states that by 2050, approximately USD 15.1 trillion will be invested in new power capacity, with USD 5.9 trillion of this investment being made in wind energy and USD 4.2 trillion in solar energy. Asia-Pacific countries, especially China and India, are expected to account for 45% of this capital investment, with America and Europe following in their footsteps.

Developments in energy transformation cause geopolitical effects apart from their economic and technological dimensions. The transition from one energy source to another reveals new geopolitical equations covering the geographies of these energy sources (Carley et al., 2018, p. 138). Energy transformation relies on underground resources that are concentrated in a few countries. A handful of nations often control these resources' extraction, separation, and export. This creates new geopolitical tensions around energy security, which must be addressed through sustainable climate, energy, and technology policies.

The discovery and utilization of coal, oil, and natural gas marked a significant turning point in the energy geopolitics of the world. These resources had critical beginnings, both in terms of geography and national origin, over the last two centuries. The extraction and use of these resources brought about significant changes in the global economy, politics, and the environment. Coal was the first important energy source, followed by oil and natural gas, which have since become the world's primary energy sources. The discovery and exploration of these resources have led to the development of new technologies, industries, and markets that have transformed the global energy landscape. The transition between different energy sources has resulted in many economic, logistical, and technical infrastructural problems. Shifting from one energy source to another has also created significant political and geopolitical tensions. Extracting these resources requires a substantial investment, and as a result, countries that lack the necessary economic power often become vulnerable to foreign intervention. Having the technology to extract resources is as important as investing in them. There is a need for laying oil and natural gas pipelines across seas and continents, pumping stations, refinery facilities, and sea and land vehicles with a carrying capacity of thousands of tons. When oil and natural gas pipelines pass through multiple countries' sea and land borders, it becomes necessary for those countries to reach agreements. In cases where no agreements or bilateral or tripartite contracts are based on international law and fairness, it can lead to issues with other nations and even the possibility of conflict.

Industrialized countries have a high demand for energy to maintain their industries. The need for energy to continue industry operations, the geopolitical considerations that come with meeting this need, and the measures required to ensure the sustainability and security of these considerations are interconnected issues that impact each other. It is imperative to allocate military funds toward securing our energy supplies. This requires the construction of combat vehicles for land, sea, and air, along with the acquisition of energy resources like oil, which are critical for these vehicles. These factors must become the primary focus of attention for both regional and global security and global geopolitics. The unequal distribution of the world's natural resources has led to developed countries exerting control over oil and gas reserves in underdeveloped countries. This control has enabled developed countries to establish hegemony over these regions, leading to political and economic destabilization and, in some cases, civil wars and chaos (Kakışım, 2022, p. 108).

The discovery, supply, storage, and security of different energy resources can rebuild the geopolitical equations that arose from coal, oil, and natural gas energy sources. It is possible to state these various energy sources as "Critical Minerals." The minerals mentioned below are essential in constructing power plants, wind turbines, solar panels, electric vehicles, and energy storage units (batteries). These minerals include rare earth elements such as lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium; and other minerals such as lithium, cobalt, copper, nickel, germanium, graphite, beryllium, and tellurium (Kakışım, 2022, p. 108).

Critical minerals were evaluated in the "The Role of Critical Minerals in Clean Energy Transitions" report published by the International Energy Agency (IEA) in March 2022. (International Renewable Energy Agency Report, 2022). This report states that the mineral requirements of the energy system working with clean energy technology and those working with hydrocarbon energy are different. The expansion of the electricity grid necessitates substantial quantities of copper and aluminum. Copper, silicon, and silver are required for clean energy production via solar panels. Minerals like lithium, nickel, cobalt, manganese, and graphite are essential to guarantee optimal performance and energy density of electric car batteries. Moreover, rare earth elements are critical in wind turbines and electric vehicle engines. According to the report, the demand for critical minerals is expected to increase six times in 2040 compared to 2020. Precisely, the need for lithium is predicted to increase by 42 times, graphite by 25 times, cobalt by 21 times, nickel by 19 times, and rare earth elements by seven times compared to the demand in 2020 (Gökçe, 2023).

Based on the data provided by the International Energy Agency, the top three countries with the highest capacity for oil extraction are the USA, Saudi Arabia, and Russia. Meanwhile, the USA, Russia, and Iran are the top three countries with the highest capacity for natural gas extraction. Regarding oil processing, the USA, the People's Republic of China, and Russia are the top three countries. At the same

time, Qatar, Saudi Arabia, and the USA are the top three countries in natural gas processing (International Renewable Energy Agency Report, 2022).

The extraction and processing of critical minerals differs significantly among countries. Chile, Peru, and the People's Republic of China are the top three countries in copper extraction capacity. Similarly, the top three countries in copper processing capacity are the People's Republic of China, Chile, and Japan. The countries with the highest rare earth extraction capacity are the People's Republic of China, the USA, and Myanmar. Meanwhile, the countries with the highest rare earth processing capacity are the People's Republic of China, Malaysia, and Indonesia. Australia, Chile, and the People's Republic of China are the top three countries in lithium extraction capacity for electric vehicle batteries. Meanwhile, the People's Republic of China, Chile, and Argentina are the top three countries in lithium processing capacity. Democratic Republic of Congo, Russia, and Australia in terms of cobalt extraction capacity; In terms of cobalt processing capacity, the People's Republic of China, Finland, and Indonesia take the top three places (International Renewable Energy Agency Report, 2022).

More than 75 % of the global production of Lithium, Cobalt, and Rare Earth elements is controlled by the three largest producing countries in the world. Based on the 2019 data, the Democratic Republic of Congo and the People's Republic of China jointly produce 70 % of Cobalt and Rare Earth Elements. The People's Republic of China holds a significant share in the processing of Nickel, accounting for 35 percent. China's share in Cobalt and Lithium processing is even higher, ranging between 50-70 percent. Additionally, Chinese energy companies invest in countries such as Australia, Chile, the Democratic Republic of Congo, and Indonesia (International Renewable Energy Agency Report, 2022).

The People's Republic of China has the world's largest proven reserves of rare earth elements and is the country that consumes and exports these elements the most (Körst 2020, p. 28). It controls 90 % of the rare earth's production in the processing and separation processes (Schmid, 2019, p. 380).

Half of the world's proven cobalt reserves are in the Democratic Republic of Congo (DRC). It is expected to supply around 70% of the global cobalt supply by 2020, making it the country with the largest cobalt reserves (Körst, 2020, p. 32).

34% of lithium reserves are in Bolivia, 31% in Chile, 13% in China, 8% in the USA, 6% in Argentina, and 3% in Australia. Australia and Chile are the leading producers and exporters of lithium (Swain, 2017, pp. 388-403).

When assessing the distribution of mineral reserves globally, it is revealed that only six countries - Australia, the Democratic Republic of Congo, Brazil, China, Chile, and Russia - hold 66% of cobalt, 52% of nickel, 33% of copper, 84% of lithium, and 100% of silver. These countries also possess 33% and 70% of other rare earth elements, respectively (Månberger & Johansson, 2019, pp. 1-10).

According to Table 1, the People's Republic of China is a major player in producing and using critical minerals. They have a high capacity for extraction, storage, and processing of minerals such as Cobalt, Copper, Lithium, and Nickel, as well as energy resources. Although this situation contributes to China's transition to clean energy and economic development, it also makes it a target for countries needing these resources. Minerals and rare earth elements have become the source of trade wars, international tensions, and diplomatic crises between China and the US, EU, Japan, and Australia. In 2010, China imposed a limit of 40% on the export quota of rare earth elements. This decision created diplomatic tensions because it indicated China's desire to retain these raw materials for its economy instead of exporting them (Kalantzakos, 2020, p. 8).

It is important to note that countries rich in critical minerals have become areas of power struggles for imperialist countries. The Democratic Republic of Congo, which is rich in cobalt reserves, is in heavy corruption and economic fragility, and the control of the cobalt reserves is in the hands of separatist groups and armed groups.

Table 1: Usage Areas of Critical Minerals and the Most Producing Countries

Beryllium	Wind Power	Brazil, China, Madagascar, Mozambique, Portugal
Cobalt	Batteries, Energy Storage and Electric Vehicles	Democratic Republic of Congo, China (Largest decomposer)
Gallium	Solar Energy	China (Largest decomposer)
Germanium	Solar Energy Systems, Fiber Cables	Canada, China, Finland, Democratic Republic of Congo
Indium	Solar Energy Systems	China (50%), Belgium, Canada, Japan, South Korea
Graphite	Battery Technologies, Electric Vehicles	China (67%), India, Brazil
Lithium	Battery Technologies	China, Australia
Niobium and Tantalum	Energy Storage	Brazil (90%), Canada
Rare Earth Elements	Clean Energy Applications	China (90%), Australia
Selenium	Solar Energy Systems	Japan (51%), Belgium, Canada and USA
Tellurium	Solar Energy Systems	China, Sweden
Vanadium	Battery Technologies	China, Russia, South America

Source: (Kakışım 2022, p. 102).

In South America, Chile, Argentina, and Bolivia have the world's richest lithium reserves and are fragile and unstable countries. The political upheaval in Bolivia in 2019 had a detrimental impact on

the land. Meanwhile, in Chile, indigenous communities are taking a stand against the extraction of minerals due to the social inequality and environmental destruction caused by mining activities. Conversely, Argentina faces severe economic turmoil (Kalantzakos, 2020, p. 10).

The final declaration of the G20 Leaders' Summit held in India between 9-11 September 2023 emphasized that "pursue and encourage efforts to triple renewable energy capacity globally through existing targets and policies" (G20 New Delhi Leaders' Declaration, 2023).

Another decision taken at the G20 Leaders' Summit was the establishment of the IMEC Line. In his statement, the US President announced the "India-Middle East-Europe Economic Corridor" (IMEC) to connect India to the Middle East and Europe. He called this corridor "a big deal." This corridor has become an alternative route to the "One Belt, One Road" project of the People's Republic of China. The geopolitical struggle between India, China, and Pakistan in Asia also directly impacts trade routes. The "One Belt One Road" initiative's southern trade route to Pakistan's Gwadar port and India's Mumbai route highlights the competing interests of nations with rich mineral resources and nations vying for influence in the geopolitical arena.

Countries with critical minerals, such as the People's Republic of China, are of interest to developed countries seeking to acquire these minerals. Many countries implement policies to enhance their relations with countries that possess critical minerals in terms of military, economic, and political power. Although these policies must be implemented based on the principle of mutual gain in dialogue and peace between countries, they are also likely to lead to conflicts and wars. Imperialist countries, including the USA, are ready to try all methods to secure their needs for critical minerals. While the USA is attempting to mobilize diplomacy, it is also working to improve its readiness and alliances in preparation for potential conflict or war. In the "National Security Strategy Document" published annually by the United States of America, critical minerals are highlighted in the section titled "Climate and Energy Security In the "Our Global Priorities" section of the document, it outlines how to shape the relationship with China and Russia.

The US National Security Strategy Document emphasizes that the Russia- Ukraine war and climate changes have made clear the urgent need to accelerate the transition from hydrocarbon energy. In the Security Strategy document, it is stated that long-term energy security depends on clean energy. The document also emphasizes the need for energy security, affordable costs, and access to critical mineral supply chains. It is stated that the USA should work together with its partners and allies when implementing this policy. The USA collaborates with partners such as the International Energy Agency, USA-EU, European Energy Security Task Force, Clean Energy Ministerial Meeting, Strengthen Africa, Eastern Mediterranean Gas Forum, and others. However, the USA's allies are countries it cooperates with, particularly in the Indo-Pacific region and Western countries (National Security Strategy, 2022, p. 22).

The US National Security Strategy Document's "Overview of Our Strategic Approach" section emphasizes strengthening relationships with democratic allies and partners in the Indo-Pacific and Europe in technology, trade, and security. The section also highlights that the People's Republic of China is the most significant challenge for the USA under the same heading (National Security Strategy, 2022, pp. 11-14).

While it is emphasized that the general strategy of the USA is primarily cooperation, it is stated that if cooperation is not possible, they will not hesitate to use force for America's interests (National Security Strategy 2022, p. 22).

Information the USA sees as a threat to the People's Republic of China is included in various National Security Strategy Document articles. It is noted that the People's Republic of China stands out as the only competitor possessing the requisite will and the economic, diplomatic, military, and technological capabilities to reform the global system. The document further acknowledges China's significant impact on climate change and global public health. It has been stated that the coming decade will hold great significance in the competition with the People's Republic of China. However, the United States will always be open to working with China and engaging in dialogue wherever their interests coincide (National Security Strategy, 2022, pp. 23-26).

The ten-year target of the USA in China competition and the need for critical minerals in 2030-2040, as stated in the International Energy Agency's report, are compatible with each other. The United States is already crafting its Indo-Pacific strategy, emphasizing clean energy derived from critical minerals. The National Security Strategy Document highlights the importance of improving cooperation and creating strong and durable relationships with various countries and groups. These include the Indo-Pacific Quartet (Australia, India, Japan, and USA), I2-U2 (India, Israel, UAE, and USA), AUKUS (Australia, United Kingdom, and USA), and USA-EU, as well as the Trade and Technology Council (National Security Strategy 2022, 13).

To create a bloc against China in the region, the USA is developing policies together with countries such as Taiwan, South Korea, and Japan, which have problems with the People's Republic of China, or Australia and New Zealand, which are sociologically similar to itself. When examining countries with which the USA has diplomatic relations, it becomes apparent that certain nations, such as Australia and Indonesia, possess significant deposits of critical minerals. In addition, the USA is also cooperating with countries such as India, whose critical mineral needs will increase in the next decade. In addition to economic benefits, India-US cooperation can leverage the current geopolitical tensions between India and China to strengthen their strategic partnership. India and the US can collaborate to counterbalance China's influence, maintain regional stability, and promote peace. Furthermore, the two countries can collaborate on various security and defense initiatives to enhance their military capabilities and ensure the region's security. The India-Middle East-Europe Economic Corridor (IMEC) was adopted

at the G20 India Leaders' Summit. The rivalry between China, India, and the US shapes its geopolitical implications. The USA's invitation to Japan, South Korea, Australia, and New Zealand from the Pacific region to attend the NATO Leaders Summit held in Madrid from 28-30 July 2022 is significant in terms of the future of alliances in the region. The United States is actively shaping its Indo-Pacific policy, as demonstrated by the participation of these countries in the NATO meeting of the Atlantic Defense Organization.

US support for Taiwan contradicts the United Nations' decision in the relationship between China and Taiwan. The United Nations General Assembly passed Resolution 2758 on October 25th, 1971, acknowledging the People's Republic of China as the only lawful representative of the Chinese people in the UN. The USA's support for Taiwan in the relationship between the People's Republic of China and Taiwan means it does not comply with the United Nations (UN) decision.

To confront China alone in the Pacific region, the USA limits potential supporters of China in different areas of conflict. One of them is Russia. Federation. During the Russia-Ukraine War, Russia's military, economic, and political energy concentrated on the Ukraine conflict. At the same time, the USA prevented Russia from supporting China in a hypothetical US-China conflict.

The USA does not only develop hegemonic policies over countries with critical minerals in the Pacific region. The USA and other Western imperialist countries pursue colonial and hegemonic policies on critical mineral-rich African countries such as Mozambique, Democratic Congo, and Niger. This can be observed from recent developments in these countries.

5. CONCLUSION

With the emergence of capitalism, developed countries began searching for raw materials and energy to increase capital, make investments, and ensure the sustainability of their economy. Rapid technological development has increased the demand for cheap energy and raw materials to sustain industry. All regions with hydrocarbon energy resources, particularly the Middle East and Caucasus, are areas of imperialist competition and struggle. This competition and struggle has gone beyond the legal and humanitarian dimensions and has reached the level of conflicts between countries. In these conflicts, the local people and advanced weapon technologies are utilized. Today, geographies rich in hydrocarbon energy struggle with civil war and terrorism. Places such as Iraq, Syria, Libya, Ethiopia, Sudan, Egypt, the Caucasus, Iran, and the Eastern Mediterranean are the battlefields of imperialist countries.

While the reduction in hydrocarbon energy and the impact on climate change emphasize the need for clean energy, technological advancements have also increased the demand for certain elements. The developed imperialist countries, which feel this need the most, want to invade the geographies rich in these critical minerals. It is important to establish cooperative relationships with countries that possess critical minerals. This cooperation should be based on goodwill and trade. If such cooperation does not

exist, particularly if countries rich in critical minerals compete with imperialist nations globally, it can create conflicting policies and even conflicts.

The US National Security Strategy document emphasizes the importance of critical minerals and considers the relationships with the regions where these minerals are found. This focus is reflected in the policies developed to ensure their supply and sustainability. The Pacific region is at the top of these geographies. Also, in the report published by the International Energy Agency, it is seen that most of the critical minerals are in China. Therefore, relations with China are emphasized in the "China" section of the US National Security Document. It is stated that relations with China should be maintained on their normal course or that one should be prepared for the conflict dimension of competition with China. These issues are particularly prominent in the Pacific region, which is a crucial area in the struggle to secure the energy necessary for the United States to maintain its hegemony as the world transitions from a unipolar to a multipolar structure. In this struggle, the USA may exploit the Taiwan issue, which is China's sensitive side. At the same time, it is attempting to unite other economically and demographically strong countries in the Pacific region around itself.

In the International Energy Agency report, the amount of critical minerals generally needed in 2030-2040 is directly proportional to the critical minerals needed by the USA to maintain its hegemonic policies based on technology production. The USA is preparing to meet this need either in a peaceful environment or by considering the possibility of conflict.

While the USA focuses on the Pacific region to supply critical minerals, other countries will compete with the USA to meet their critical mineral needs. Countries with critical minerals will also try to maintain their current situation and develop policies in line with their own interests. In this case, it increases the risks of conflict in the region.

In the upcoming years, the Pacific region, particularly the People's Republic of China, will be the center of global conflict due to its possessing critical minerals significant in global politics. Imperialist countries, particularly the United States, aim to destabilize regions rich in hydrocarbons and gain control by supporting proxy terrorist organizations such as DAESH, PKK/PYD, and Al Qaeda or hiring mercenaries. At the same time, these countries establish new geopolitical arrangements in areas where critical minerals are found through the collaboration of nation-states and supranational organizations.

The demand for critical minerals has skyrocketed as the world increasingly relies on technology. The Indo-Pacific region, spanning from the eastern shores of Africa to the western coast of the United States, is home to a vast array of these valuable resources. As a result, the Indo-Pacific region will become the new geopolitical struggle land with countries vying for control over these precious resources vital to the global economy.

This research does not need the approval of Ethics Committee.

The study has been crafted in adherence to the principles of research and publication ethics.

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REFERENCES

- Arı, T. (2006). BOP, Ortadoğu ve ABD: Politika mı propaganda mı? *Global Strateji Dergisi*, 57-87.
- Aron, R. (2003). *Peace and war: A theory of international relations*. Transaction Publishers.
- Bayat, M. (1986). *Milli güç ve devlet*. Belge Yayınları.
- BloombergNEF. (2020). *New energy outlook 2020*. <https://about.bnef.com/new-energy-outlook/>
- Carley, S., Evans, T. P. & Konisky, D. M. (2018). Adaptation, culture, and the energy transition. American coal country. *Energy Research & Social Science*, (37), 133-139. <https://doi.org/10.1016/j.erss.2017.10.007>
- Clover, C. (1999). Dreams of the Eurasian heartland. *Foreign Affairs*, (78), 8-10.
- Collins, J. M. (1998). *Military geography for professionals and the public, national defense*. University Press.
- Doster, B. (2017). Türkiye için 2 kritik soru: Jeopolitik öneminin farkında mı? Stratejisi var mı? In E. Ergen (Eds.), *Avrasya'nın kilidi Türkiye*, (pp. 83-110). Kaynak Yayınları.
- Evans, G. & Newnham, J. (1998). *The penguin dictionary of international relations*. Penguin Book.
- G20 New Delhi Leaders' Declaration. (2023). *Implementing clean, sustainable, just, affordable & inclusive energy transitions*. New Delhi, India. September 9-10. https://www.g20.org/content/dam/gtwenty/gtwenty_new/document/G20-New-Delhi-Leaders-Declaration.pdf
- Fettweis, C. J. (2015). On heartlands and chessboards: Classical geopolitics, then and now, *Orbis*, 59(2), 233–48.
- Gökçe, A. F., (2022). *ABD Ulusal güvenlik strateji belgesinin şifreleri*. Yeni Şafak Gazetesi, November 17, 2022. <https://www.yenisafak.com/dusunce-gunlugu/abd-ulusal-guvenlik-strateji-belgesinin-sifreleri-3890446>
- Hartman, F. H. (1983). *The relation of nations*. Mac Millan Publishing Co.
- International Renewable Energy Agency (IRENA) Report. (2020). *Global energy transformation: a road map to 2050* (2020 Edition). https://www.irena.org//media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_Global_Renewables_Outlook_2020.pdf
- International Renewable Energy Agency (IRENA) (2022). *The role of critical world energy outlook special report minerals in clean energy*. <https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf>
- Kalantzakos, S., (2020). The race for critical minerals in an era of geopolitical realignments. *Italian Journal of International Affairs*. 55(3), 1-16. <https://doi.org/10.1080/03932729.2020.1786926> .
- Kahraman S. & Şenol, P. (2018). İklim değişikliği: küresel, bölgesel ve kentsel etkileri. *Academia Journal of Social Sciences- Special Issue*(1), 353-370.
- Kakışım, C. (2022). Kritik minerallerin Türkiye'nin enerji dönüşümüne etkisi: teknoloji bağımsızlığı açısından yeni jeopolitik tehdit. *Mukaddime*. 13(1): 101-124. <https://doi.org/10.19059/mukaddime.910508>
- Klare, M. T. (2002). *Resource wars: The new landscape of global conflict*. Henry Holt.
- Korts, M. (2020). The strategic importance of rare earth minerals for NATO, EU and the United States and its implications for the energy and defense sectors. In R. Petkevičius (Eds.), *Energy security: operational highlights (the NATO energy security center of excellence)*, (pp. 24–40).

- Mackinder H. J. (1962). *“The geographical pivot of history” in democratic ideals and reality*. Norton and Company.
- Mahan, A.T. (1987). *The influence of sea power upon history 1660-1783*. Dover Publications.
- Månberger, A. & Bengt Johansson, B., (2019). The geopolitics of metals and metalloids used for the renewable energy transition. *Energy Strategy Reviews*, (26),1-10. <https://doi.org/10.1016/j.esr.2019.100394>
- Morgenthau, H. J. (1967). *Politics among nations*. Alfred E. Knopf Inc.
- National Security Strategy. (2022). *Climate and energy security*, White House, October 12, 2022. <https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf>
- Özer, Y. E. (2016). Türkiye'nin yenilenebilir ve temiz enerji konusunda ABD, Çin ve Avrupa Birliği ile karşılaştırmalı analizi. *Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. 9(1), 137-157. <https://doi.org/10.17218/husbed.53941>
- Schuman, F. L (1942). Let us learn our geopolitics, In A. Gyorgy (Eds.), *The Geopolitics of War: Total War and Geostrategy*. *The Journal of Politics*, 5(4), 348–360.
- Schmid, M. (2019). Rare earths in the trade dispute between the US and China: A déjàvu. *Intereconomics, Leibniz Information Centre for Economics*, 54(6), 378-384. <https://doi: 10.1007/s10272-019-0856-6>
- Spykman, N. J. (1942). *The geography of the peace*. Harcourt and Brace.
- Scholvin, S. (2016). *Geopolitics. An overview of concepts and empirical examples from international relations*. The Finnish Institute of International Affairs. <https://www.files.ethz.ch/isn/196701/wp91-Geopolitics.pdf>
- Swain, B., (2017). Recovery and recycling of lithium: A review. *Separation and Purification Technology*, (172), 388-403. <https://doi.org/10.1016/j.seppur.2016.08.031>
- Taylor, P. G., Wiesenthal, T. & Aphrodite, M. (2005). Energy and environment in the European Union: an indicator-based analysis. *Natural Resources Forum*. 29(4), 360–376. <https://doi.org/10.1111/j.1477-8947.2005.00147.x>
- Van Beek, Ursula J. (2011). China's global golicy and Africa: A few implications for the post-crisis world. *Politikon*, 38(3). 389-408.
- Van Dijk, Meine Pieter. (2009). Objectives of and instruments for China's new presence in Africa. In Meine Pieter van Dijk (Eds.) *The new presence of China in Africa*. University Press,
- Yılmaz, S., (2015). Jeopolitik ve jeostrateji. In Ü. Özdağ (Eds.), *Milli güvenlik teorisi*, (pp. 201-248). Kripto Yayınları.
- Yılmaz, S., (2017). Jeopolitik ve büyük strateji. In E. Ergen (Eds.), *Avrasya'nın kilidi Türkiye*, (pp.163-187). Kaynak Yayınları.