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Environmental Issues between the Conflict Over Fossil Energy and the Inevitability of Renewable Energy

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ABSTRACT

This paper attempts to provide an analysis of the relationship between environmental issues, fossil fuel consumption rates, and economic practices. All environmental protection initiatives remain hostage to strategic calculations, the crisis of the transition to renewable energy, and the state's public policy priorities.

Study Objectives: Through an interpretive and methodological approach, this study aims to:

First: shed light on the relationship between environmental practices and the environment through the concept of economic growth rates and fossil energy consumption, and analyze the relationship of influence and impact between the environment, economy, and energy triad.

Second: employ a political-economic approach through countries geostrategic calculations to provide an explanation for current wars and conflicts.

Theoretical Framework and Methodology: The methodological and theoretical framework adopted to analyze the study topic includes the following:

First: The descriptive-analytical approach, which helps describe, analyze, and predict by identifying its characteristics and dimensions, describing the relationships between its variables, and their correlation symbols, with the aim of arriving at a comprehensive scientific description. This approach is considered one of the most important scientific approaches adopted in studying phenomena.

Second: The interpretive approach: To build a logical structure to describe and explain the relationship between the environment and energy, we relied on the economic-political approach, based on the realism of the concept of state interests and conflicts over energy resources.

Results and Discussion: From the approach used, it can be concluded that countries are unable to overcome the dominance of fossil fuels over their economies, which drives them to conflict over oil and gas resources, at least in the foreseeable future. Despite the environmental crisis, countries' geostrategic calculations drive them to exploit the environment to achieve their interests and ensure their influence.

Therefore, environmental issues in securing energy resources are evident as one of the most significant obstacles to reaching a comprehensive and binding agreement between major powers. Each country seeks to negotiate with the least possible responsibility and cost. Therefore, countries view environmental negotiations either as a means to weaken their economy, thereby diminishing their influence and role, or as an opportunity to weaken other competing powers regionally and internationally.

Research Content: Using a political-economic approach, the study focuses on statistical data to examine the relationship between economic growth and energy consumption, and countries' economic calculations for maintaining their influence.

Accordingly, energy resources influence the orientations of their foreign policies and the limits of this influence. By energy resources, we mean traditional energy sources, specifically oil and natural gas, which constitute a significant axis of economic growth and foreign policy, making them clearly influential in countries' geostrategic calculations.

Originality/Value: The originality and value of the study lie in establishing an explanatory correlation between fossil energy consumption rates, economic growth, and the contradictions in the use of environmental issues within geostrategic calculations.

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Introduction

The environment has been impacted by human activity. Environmental imbalance quickly spread, and the problem of the environment's weak and ineffective ability to digest its waste

emerged, as a result of receiving horrific quantities of industrial and other human waste. This is perhaps due to the loss of the environment's ability to self-dispose of its waste, and the failure to control pollution sources and address the environmental deficit at the international level.

The Earth's condition is deteriorating with the continued and increasing population pressure and shifting economic patterns across vast areas. This is in addition to the repercussions of changing global politics, the proliferation of nuclear tests, and the spread of crimes related to military operations. Furthermore, wars for dominance over mineral resources in smaller countries (including oil fields) are being waged through military intervention and occupation.

On the other hand, major powers exploit the opportunity of these wars (outside their territories) to conduct live experiments and observe the effects on environmental and human barriers to various types of weapons, including weapons of mass destruction. This has disrupted the environment's integrity, threatening environmental security in war zones and natural and human-caused disasters that transcend their geographical boundaries and often lead to various forms of environmental change.

Theoretical Framework

To create a logical structure for describing and explaining the relationship between the environment and energy, we adopted a political-economic approach based on the interests of states and conflicts over energy resources, and the attempt to maintain economic growth through the continued consumption of fossil fuels.

Research Problem

How Do Major Powers deal with Environmental issues?
And what is the Nature of the Disagreement between the World's Major Powers on Environmental Issues and the Possibility of an Agreement to Protect the Environment?
Hence, the following questions can be raised:

- What are environmental problems?
- What are international efforts to protect the environment?
- How do major powers deal with environmental issues?

The importance of the study lies in its attempt to shed light on environmental problems and international efforts, including agreements and conferences, to protect the environment. It also attempts to analyze the nature of the disagreement between major powers regarding the possibility of establishing a final agreement binding on countries to protect the environment.

Study Hypothesis

This research attempts to prove or refute the following hypothesis:
National Interests are the Cause of Disagreement between Major Powers on Environmental Issues

The objectives of this study are to determine the cause of disagreement between major powers on environmental issues. It also seeks to analyze the reasons that prevent major powers from reaching a binding global agreement to protect the environment.

Based on the nature of the topic, in line with the methodology used and in order to reach results, the study structure was divided into:
Axis 01: Economic Practice and the Mass Destruction of the Environment.

First: The Relationship Between Economic Growth and Energy Consumption.

Second: Fossil Energy as the World's Most Important Energy

Source and the Problem of Environmental Pollution.

Axis 02: Environmental Issues and the Inevitability of the Transition to Renewable Energy.

First: The Cost Problem of the Transition to Renewable Energy.

Second: Renewable Energy and State Public Policy

Axis 03: Environmental issues between political and economic considerations.

First: The environment and the problem of conflict over energy resources.

Second: Environmental issues and geostrategic balances.

Theoretical Framework

There is a body of literature and previous studies that have analyzed the relationship between environmental issues, fossil energy consumption, and the future of the energy transition. Perhaps the most prominent of these are the official reports of international, regional, and national institutions that focus on this topic. The theoretical framework will also address the concept of economic practices through the relationship between the concept of growth, energy consumption rates, and the continued existence of fossil fuels as a primary source of energy, at least in the medium term. It is also necessary to point out the pressures imposed by the concept of the transition to renewable energy and the challenges and threats it entails through the concept of the cost of the transition and its relationship to the state's public policy.

Axis 1: Economic Practice and the Mass Destruction of the Environment

First: The Relationship between Economic Growth and Energy Consumption

The oil sector is the world's most important source of energy. It is a closed sector due to the nature of the extraction process, coupled with fluctuating oil prices. This sector requires significant capital, advanced technology, and highly skilled labor. This forces countries rich in this resource to rely on advanced foreign companies to exploit this wealth. Consequently, they are unable to benefit from oil revenues and increase economic growth rates without resorting to Western production factors [1].

Long-term economic growth, represented by the rate of increase in gross domestic product (GDP), is one of the most important priorities that countries seek to achieve. Economic theories differ on the determinants of economic growth, based on a number of micro- and macroeconomic variables. Identifying the source of growth is essential to activating economic growth and ensuring its continuity through the adoption of appropriate economic policies. Therefore, economic growth has become the focus of many economic studies [2].

Energy production and prices in general, and oil in particular, have the greatest impact on the economic activities and financial and monetary policies of many countries in general, and on hydrocarbon-rich countries in particular, given that these countries are oil-producing and exporting countries. Accordingly, the problem is whether the increase in global energy consumption and consequently the volatility in oil prices have positive or negative effects on economic growth. Studies prove that a decrease in global energy consumption or a decrease in global energy prices will negatively impact economic activity levels, especially in countries that depend on oil revenues in their economies, especially with the rise of new economic powers capable of consuming energy, especially oil, such as China, India and Brazil, as the following figure shows.

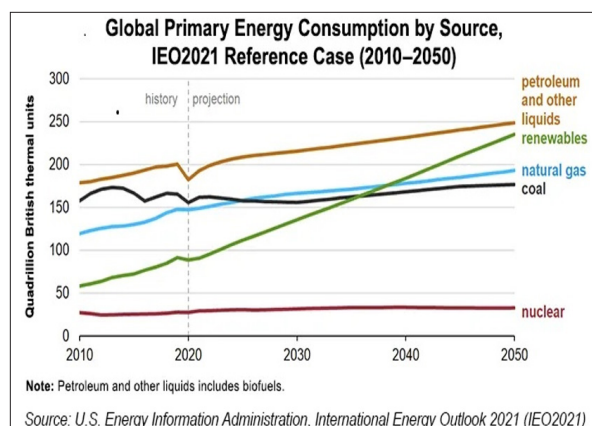


Figure 1 : Global Primary Energy Consumption by Source (2010–2050)

Source: Jeremiah Shelor, World Energy Demand, Including Oil and Gas, Rising to 2050, EIA Says, Natural gas intelligence, on October 07, 2021, web: <https://naturalgasintel.com/news/world-energy-demand-including-oil-and-gas-rising-to-2050-eia-says>

The world is witnessing an increase in the consumption and production of all types of energy, with the consumption increase rate reaching about 2.3%. Oil remains the most important fuel to this day, although it is not the primary source of energy in general in the world, as coal has been the king of energy since the Industrial Revolution [3].

Thus, there is a mutual influence between economic growth and the environment. This mutual influence appears in the form of a contradictory relationship that focuses on the problem of achieving economic growth rates while simultaneously preserving the environment. Environmental protection has become a fundamental element in the calculations of development and growth. On the other hand, economic growth is necessary to provide financial budgets to establish environmental protection programs and policies [4].

Second: Fossil Energy as the World's Most Important Energy Source and the Problem of Environmental Pollution

Fossil energy is the world's most important energy source. Coal is the world's primary energy source, accounting for approximately 30% of global energy production and more than 40% of electricity production. Although its heyday ended decades ago, followed by the oil, nuclear, and other revolutions, its consumption and production are still increasing. It is the fastest-growing fossil fuel, but its growth is declining compared to its previous rates. Unlike oil and gas, whose natural reserves are expected to be exhausted in less than a century, analysts expect coal reserves to last for about a century and a half. The United States and China consume all of their domestic oil and gas production, leaving Saudi Arabia and Russia as the world's top exporters. Liquefied natural gas (LNG) is better to use due to its lower pollution levels. The carbon dioxide released from burning gas is about a third lower than that of oil and about half lower than that of coal [3].

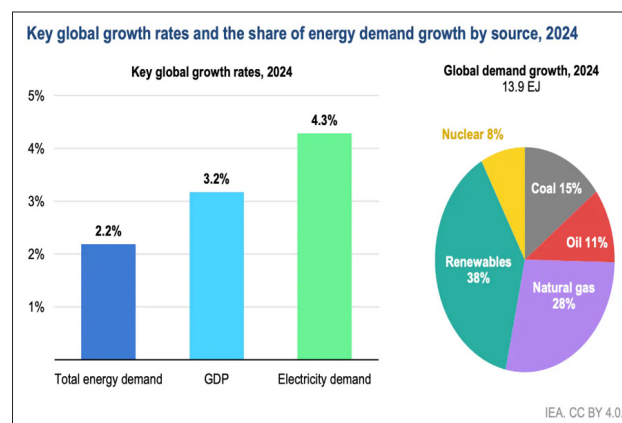


Figure 2: Growth in Energy Demand Surged in 2024

Source: Roberto Bocca, Surge in global energy demand growth, and more top energy stories, World Economic Forum, Published Apr 2, 2025 · Updated Apr 3, 2025, web: <https://www.weforum.org/stories/2025/04/surge-in-global-energy-demand-growth-and-more-top-energy-stories/>

Global energy demand growth in 2024 is expected to be nearly double its recent average, according to a new report from the International Energy Agency. Global energy demand rose by 2.2% compared to last year, significantly faster than the average annual increase of 1.3% over the previous ten years. Emerging and developing economies accounted for more than 80% of the increase in 2024. After several years of decline, advanced economies are returning to growth. The IEA reported that the energy sector was at the forefront of this acceleration in growth rates. In 2024, global electricity consumption rose by 4.3%, with low-emission energy sources accounting for most of this increase.

Axis 02: Environmental Issues and the Inevitability of the Transition to Renewable Energy

First: The Cost Problem of the Transition to Renewable Energy

Industrialized countries have begun to reassess the cost of tampering with climate change on their medium- and long-term budgets. They have begun to see that current industrial technologies, which are wasteful to the environment and the climate, could allow emerging industrialized countries like China, India, and Brazil to catch up if they maintain their current growth rate in global energy consumption of oil, gas, and coal. This threatens industrialized countries' ability to share global markets. For this reason, they have resorted to hindering emerging countries by introducing new, clean technologies before their current technologies expire, increasing the cost of their transition to clean technologies.

The core problem at environmental conferences lies not so much in the lack of agreement on the principles of compensation and aid as in how developed countries manage the necessary funds, especially in light of the growing global financial crisis and the enormous cost of combating global warming. Paying this bill requires at least \$150 billion annually. Similar disagreements also exist between emerging powers, particularly China, India, and Brazil, and between the European Union, Japan, Australia, and the United States. The United States believes that these economies are no less polluting than it, and therefore must make specific concessions and pledge to reduce these emissions. Given all these issues, each party seeks to emerge from environmental negotiations with the greatest possible gains or the least costly bill, so as not to impact national development strategies and policies [5].

In anticipation of oil depletion, and for economic, political, and environmental reasons, many countries have taken a series of measures to modify their energy systems and develop diverse and alternative sources. Although fossil fuels are expected to dominate global energy supplies, their contribution to energy growth is likely to decline from 80% to 65%. The most important renewable energy sources are solar, wind, and biomass [6].

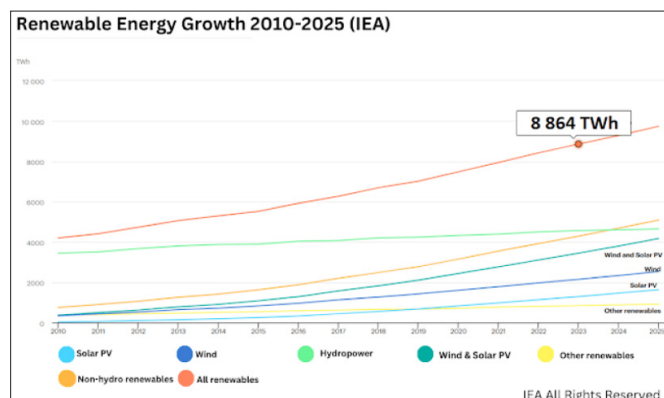


Figure 3: Renewable Energy Growth 2010-2025

Source: Richard matthews, Renewable Energy is Growing Rapidly but is it Enough to Stop Climate Change?, by Change Oracle, Published January 31, 2023, web: <https://i0.wp.com/changeoracle.com/wp-content/uploads/2023/02/2022-energy-energy-growth-good.png?w=667&ssl=1>

Second: Renewable Energy and State Public Policy

Development and progress plans are linked to energy, and thus securing its sources is at the forefront of the state's priorities in establishing its general policy. Renewable energy represents the ideal choice in the midst of these facts, especially if it coincides with the rapid development of technology and its decreasing costs. These developments have made renewable energy sources more attractive in global markets. Facilitating access to renewable energy has become one of the most important political decisions that a country can take in the long term [7].

The emergence of green parties in various countries, and their affiliated members from environmental organizations, is discussed. The impact of the political influence of official green parties in various parliaments, as well as agreements and treaties (such as the Kyoto Protocol), is discussed. Environmental policy expresses a general philosophy and orientation, providing a background for discussion and finding solutions to the obstacles faced by both parties, whether green parties, interest groups, or entities attempting to formulate public policy [8].

Therefore, energy remains the most important element in the equation for formulating and succeeding public policy. Without a secure and reliable energy source, formulating public policy will be difficult. Given the shift toward renewable energy, pressure from environmental organizations, and the global trend toward developing this type of energy, the pressure and complexity of the public policy process will increase, especially in light of fluctuating oil prices, the financial cost issue, and the limited technological capabilities of the state, which represent a real obstacle to formulating a national program.

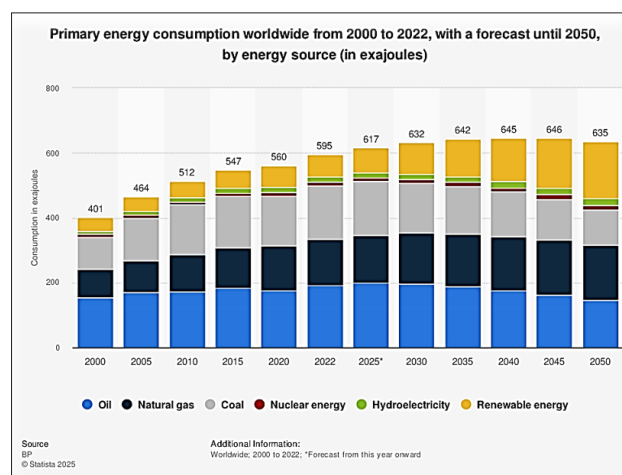


Figure 4: Primary energy consumption worldwide from 2000 to 2022, with a forecast until 2050, by energy source

Source: Primary energy consumption worldwide from 2000 to 2022, with a forecast until 2050, by energy source, Published by Statista Research Department, Mar 19, 2025, <https://www.statista.com/markets/408/energy-environment>.

Methodology

The methodological framework of the study is based on the use of a descriptive analytical approach, attempting to analyze and establish a correlation between the study variables-environmental issues, economic growth rates, and future energy consumption-in the context of geostrategic balances.

Bibliographical and documentary research was used as a tool to collect information and data, presenting them in a statistical form for use in analyzing and interpreting the correlations between variables while maintaining the credibility of the data and statistics.

Among the epistemological difficulties facing the study is the question of whether the data collection tool reflects the credibility of generalizing the results. This is particularly true given the study's approach to the concept of interest, which remains confined to the strategic perception of each state. It also addresses the contradiction between the ethical discourse of environmental conservation and the reality of interest and power within geostrategic balances that reflect the concept of conflict and war.

Results and Discussions

Through the research results, we note that environmental issues are confined to political and economic considerations, which imposes the need to address the environment and the conflict over energy resources, and to use environmental issues in geostrategic balances.

Axis 03: Environmental Issues between Political and Economic Considerations

First: The Environment and the Problem of Conflict Over Energy Resources

One of the most important files in environmental issues is the attempt to find alternative and clean energy sources that reduce dependence on oil and fossil fuels in general, as they are primarily responsible for the release of harmful gaseous emissions and current pollutants. There are intensive global efforts to search for new energy alternatives, including biofuels and hydrogen fuel. There are also other efforts to expand the use of clean energy

sources, especially nuclear energy, wind energy, solar energy, and hydroelectricity. The success of these efforts and the expansion of the use of one of these alternative sources will naturally lead to the gradual elimination of the use of fossil fuels and the harmful gases emitted from them.

Therefore, any negotiations will face major obstacles, including that the three countries, China, India, and Brazil, refuse to bear responsibility for what was previously caused by Western industrial countries, especially the United States of America and the European Union, over the course of two centuries since the first industrial revolution. They also refuse to give priority to climate protection instead of economic and, consequently, industrial development, which they are keen on, because it alone is the gateway to obtaining a place on the map of a future international system [9].

On the other hand, the bet on climate change raises security questions as a result of global warming, threatening regional and global stability through water shortages and environmental migration. In 2007, the Security Council discussed the relationship between climate and security, which many countries, including the African Group of States, considered a prelude to environmental intervention. Some of these environmental challenges are cross-border, which justifies sending forces to restore environmental stability by order of the Security Council [10].

It should be noted that new resource wealth has begun to transform the energy landscape. It is shifting and changing the centers of gravity of global production, redirecting the emerging renewable energy industry eastward from the United States and Europe to China. The spread of new resource wealth threatens the foundations of long-standing energy powers, including OPEC, major electricity producers, and multinational manufacturers. All of these parties are trying to adapt rather than collapse [11].

Energy resources play a fundamental role in the orientations of countries, especially oil, as a strategic resource, with a very important impact on the national security of both exporting and importing countries, through its impact on international security and the nature of international strategies and alliances. It appears from current data that security issues and strategic alliances will remain for a long time to come based on the issue of energy security and resources. Water is also necessary for energy production, which doubles the pressure on water resources. Accordingly, the expected increase in water consumption may reach 85% during this period until 2035, which reflects the move towards generating more water-intensive energy [12].

Finally, the transformation of energy sources through countries' efforts to ensure energy security will impose many challenges on the world in general and the international economy in particular, threatening international stability. This is due to the sensitivity of the global energy system, especially with the entry of shale gas into the global energy market and the decline in oil prices and their political and economic repercussions [13].

Second: Environmental Issues and Geostrategic Balances

The world is witnessing a growing pattern of conflict in many strategic regions, including, but not limited to, what is happening in Ukraine and Syria in the Middle East. These conflicts are caused by the intersection of lines of influence of international or regional powers, most notably the global energy space, whether in terms of energy sources in the Arabian Gulf, Africa and South America, or

in terms of land or sea energy corridors such as the South China Sea region and in Syria and Ukraine. This explains why any agreement on environmental issues between the major powers will be hostage to geostrategic calculations, especially since the national security of countries is linked to energy security [14].

Energy resources influence the foreign policy orientations of countries, especially in the field of international cooperation and conflict. In the cases of Saudi Arabia and Russia, energy resources had an impact on foreign policy. Saudi Arabia had an impact on the international system through its policy in the field of oil production and marketing, and Russia had an impact through the use of energy as a weapon to restore its international standing, especially in the Ukrainian crisis. Securing energy resources remains the most important approach to analyzing conflicts [15].

Accordingly, there is a sharp conflict of interests between industrialized countries, especially the Arab oil-producing countries, regarding the relationship between oil, finance, and the environment. Arab oil-producing countries are crude oil exporters. They exploit a portion of their natural wealth to satisfy their domestic needs and implement their development programs. They also depend primarily on the proceeds of their oil exports, and therefore their interests require increasing consumption and exports. Industrialized countries, on the other hand, are usually non-producing countries, but rather importers of oil. Moreover, their technological capabilities are sufficient to limit consumption and thus reduce imports without negatively impacting their economies. Thus, the economic interests of industrialized countries clash with those of oil-producing countries [16].

The Arab oil-producing countries' lack of support for environmental measures should be interpreted as a defense of their economic interests, not as a sign of their indifference to environmental considerations. It is a mistake to assume that these considerations prevail in industrialized countries. For example, the European Union does not impose a carbon tax on its major companies, despite them being the largest contributors to pollution and global warming. The reason for their tax exemption is purely commercial: to maintain their competitiveness.

Although the Paris Agreement does not fulfill the aspirations of all Arab countries, it is essential to preserve environmental safety. This agreement must also serve as an incentive to develop manufacturing industries and diversify sources of income in Arab countries [16].

Conclusion

Traditional energy sources, specifically oil and natural gas, are a key driver of economic growth, clearly impacting the public policy of both exporting and importing countries. It is worth noting that the availability of energy resources is not simply the availability of oil or natural gas in a country, but rather their availability in large quantities that exceed domestic consumption requirements, making it a major energy exporter.

The lack of energy resources does not mean that a country has no oil or natural gas resources at all, but rather that there is a significant gap between production and domestic consumption. Hence, this relationship between exporting and importing countries, especially in light of the problem of economic growth and development, poses a relationship of influence and impact, and countries' attempts to seek international standing, especially oil-exporting countries.

All of these problems are present in environmental issues, with the issue of energy resources being one of the most important obstacles to reaching a comprehensive and binding agreement between countries. Each country seeks to reach a consensus with the least possible responsibility and cost.

Thus, countries view environmental negotiations as either a means to weaken their economies and public policies, thereby diminishing their power and role in the international arena, or an opportunity to weaken other competing powers, whether at the regional or international levels.

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