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Green Energy and New Forms of Diplomacy: Environmental Strategies in International Power Struggle

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Abstract
This article underscores the urgency and strategic significance of transitioning to green energy, framing it not only as an environmental necessity but also as a transformative force reshaping international power dynamics, diplomatic strategies, and governance models. It investigates how this transformation has generated a new foreign policy instrument: green energy diplomacy. The study employs a conceptual-deductive methodology, combining a multi-layered content analysis with an extensive literature review, the assessment of international documents, and a theoretical framework based on realism, liberalism, and constructivism. The policies of major actors—the European Union, the United States, China, India, and Turkey—are analyzed as case examples to illustrate the evolving nature of green energy diplomacy. Findings reveal that green energy diplomacy has become a strategic arena where energy security, climate objectives, and geopolitical interests intersect. The European Union's normative leadership, the United States' technology-driven strategy, China's infrastructure-based approach under the Belt and Road Initiative, and India's equity-focused environmental policies exemplify diverse strategies shaping this new diplomatic field. Furthermore, Turkey's emerging role as a regional intermediary in energy transition highlights its potential to enhance diplomatic influence through renewable energy initiatives. The study argues that green energy policies are closely linked with multilateralism, polylateralism, and the diffusion of environmental norms, marking a departure from the traditional energy security paradigm. By emphasizing hybrid diplomatic practices, the research demonstrates that green energy diplomacy is redefining negotiation mechanisms, reshaping power relations, and influencing governance structures within the international system. Ultimately, the article concludes that green energy transformation is not only altering environmental policy agendas but also reconstructing national interests in line with global sustainability imperatives. Multilateral and polylateral cooperation emerges as a crucial pillar of this process, offering a pathway to build a more inclusive and cooperative international order capable of addressing the climate crisis.
Keywords: *Energy Security, Green Energy Geopolitics, Climate Diplomacy, Strategic Competition, Environmental Power Politics*

1. INTRODUCTİON

The international relations agenda of the 21st century is being reshaped not only by military and economic competition but also by the impact of environmental crises and the transformation of energy sources. Environmental issues, such as climate change, resource scarcity, and the pursuit of sustainability, are transforming traditional priorities in interstate relations and are becoming central to foreign policy. One of the most obvious elements of this transformation is the global transition from an energy system based on fossil fuels to renewable energy sources. However, this transition is not only a technological transformation, but also represents a multi-layered transformation that affects the balance of power in the international system and requires new diplomatic tools and strategies.

The shift towards green energy is reshaping the relationships between energy production, consumption, and distribution, while simultaneously creating a complex and multifaceted interaction among environmental sustainability, energy security, and diplomatic capacity. This new dynamic paves the way for the rise of new forms of diplomacy, such as "renewable energy diplomacy" and "hydrogen diplomacy". Renewable energy diplomacy, a term coined to describe the diplomatic efforts and negotiations related to the global transition to renewable energy, goes beyond the boundaries of traditional energy diplomacy. In particular, the green hydrogen strategies and the H2-Diplo initiative, which stand out in the European Union's global energy vision, are striking examples that integrate the goals of ensuring energy supply security, reducing carbon emissions, and deepening regional cooperation with diplomacy. While this transformation weakens the traditional geopolitical influence of fossil fuel producers, it transforms countries that produce and export renewable energy technologies into new centers of global competition. Renewable energy diplomacy is a pioneering approach that integrates environmental peacebuilding with energy transition policies, focusing on the principles of joint management of shared resources, building

digital trust, capacity building, and collaborative governance. This form of diplomacy is related not only to the technical tools of environmental policies but also to the transformation of foreign policy goals—the vision of achieving net-zero emissions by 2050 plays a central role in shaping these new diplomatic frameworks.

A green energy-based transformation also has the potential to redefine the global power balance. This process opens the door to more symmetrical and inclusive energy relations that include not only power relations between states but also the more active participation of local governments, regional actors, community-based structures and civil society in diplomatic processes. These more symmetrical and inclusive energy relations imply a shift from the traditional top-down energy governance to a more participatory and collaborative approach, where all stakeholders have a say in energy-related decisions. In this context, conflicts such as the Russia-Ukraine war bring the issue of energy security to the forefront, while climate diplomacy necessitates the management of development, security and environmental policies in an intertwined manner.

However, this transformation not only presents opportunities but also multifaceted risks. Developing countries risk falling behind in the energy transition due to technological access restrictions or inadequate infrastructure, which could deepen global energy inequality. Countries with fossil fuel-based economies, on the other hand, may resist the transformation due to concerns about losing their geopolitical influence. Therefore, the green energy transformation must be managed within the framework of fair, balanced and multilateral diplomacy on a global scale.

This study aims to analyze the effects of the aforementioned transformation process on international relations and to discuss the relationship between green energy and new forms of diplomacy on both conceptual and empirical levels. The main research question is: How does the transition to green energy lead to new forms of diplomacy in the international system, and in what ways does it restructure global power competition? In seeking an answer to this question, the transformations that have occurred in the landscape of international diplomacy, along with the shift towards green energy sources, will be addressed within a multidimensional framework. Countries that are moving away from fossil fuel-based energy systems are redefining not only their energy portfolios but also their foreign policy priorities, alliance structures and economic strategies. This transition process is leading to the emergence of innovative forms of interdependence among nations, the reshaping of diplomatic discourses around sustainability and climate responsibility, and the formation of new power dynamics in areas such as energy security, access to critical minerals, and technological capacity.

Traditionally, geopolitical influence mechanisms, which refer to the strategies and tactics used by countries to exert influence over others, based on energy exports are giving way to a new strategic plane determined by actors with high access to renewable resources and the capacity to develop these technologies. In this context, the proliferation of resources such as solar, wind, and hydrogen, as well as the strategic importance of transition-specific raw materials like lithium, cobalt, and rare earth elements, is leading to the emergence of a more complex, multi-centered, and interdependent global energy structure. While this structure promises a more sustainable and equitable energy future, it also brings new forms of geopolitical competition that need to be managed.

Therefore, the study considers the green energy transformation not only as an environmental necessity but also as a context in which diplomatic strategy production and international power relations are reshaped; and evaluates the role played by diplomacy, cooperation and strategic governance tools in this process on a central plane.

2. Conceptual and Theoretical Framework

2.1. Green Energy: Definition and Scope

Green energy refers to energy sources that are environmentally friendly, derived from sustainable and renewable resources, and have minimal impact on the environment. These energy forms are based on naturally renewable resources found in nature, primarily including solar, wind, geothermal, hydroelectric, and biomass energy (Nathani et al., 2024, p. 138). Green energy holds strategic importance in achieving global goals, including reducing greenhouse gas emissions, enhancing energy security, and promoting sustainable development (IEA, 2023). Renewable energy systems stand out as an environmentally friendly solution because they generate electricity without producing carbon emissions. These types of energy not only reduce dependence on fossil fuels but also directly contribute to the fight against climate change (Franjić, 2019, p. 43; Sharma et al., 2024, p. 4). The European Union's goal of reducing carbon emissions

by 55% by 2030 and achieving carbon neutrality by 2050 highlights the political and economic implications of this transformation (Andronicеanu & Sabie, 2022, p. 25). Green energy technologies include solar panels, wind turbines, geothermal power plants, and hydroelectric dams; these systems both reduce the carbon footprint in energy production and increase resilience to market volatility by diversifying the energy supply (Pamula, 2024, p. 1027). In particular, the transformation of energy production from centralized to more flexible, local, and resilient systems reinforces the importance of green energy investments in terms of long-term security and economic stability (Nathani et al., 2024, pp. 141-142).

However, the transition to green energy also has some structural challenges. The intermittent energy production of sources such as solar and wind necessitates the development of energy storage technologies and innovative grid systems (Sharma et al., 2024, p.11). Additionally, the high cost of initial investments in these technologies can limit their application areas, particularly in developing countries. Nuclear energy, on the other hand, is considered a temporary 'clean energy' alternative by some countries due to its low emission characteristics; however, it can be excluded from the definition of green energy due to uncertainties in sustainability and waste management (Sharma et al., 2024, p. 20). International documents reveal that green energy transformation is not only a technical process, but also a legal and political process. The Paris Climate Agreement (2015) and the European Green Deal (2019) outline countries' commitments to achieve carbon neutrality and establish the institutional foundations for this transformation (UNFCCC, 2015; European Commission, 2019). In this context, green energy has become not only an environmental necessity but also a new area of economic competition and the basis of international energy diplomacy. As a result, green energy is at the intersection of combating climate change, ensuring energy supply security, and achieving sustainable development goals, and plays a central role in the restructuring of global energy policies. This transformation must be supported not only by technological innovations and political will, but also by financial mechanisms, underscoring the economic implications of the transition.

2.2. The Evolution of Energy Diplomacy: From Traditional to Green Diplomacy

Energy diplomacy has been shaped as a strategic area focused on the supply of fossil fuels, securing access to these resources, and protecting transportation lines for many years. This traditional understanding has prioritized geopolitical and power-based relations aimed at ensuring the national security of states through energy supply (Van de Graaf et al., 2020). However, global environmental threats created by climate change and the need for sustainability have transformed the normative framework of energy diplomacy, paving the way for a new approach called green diplomacy.

Green diplomacy refers to a comprehensive transformation that encompasses the development of environmentally focused foreign policy instruments, support for international commitments to reduce carbon emissions, and multilateral cooperation in renewable energy technologies (Van de Graaf et al., 2020). This new paradigm emphasizes cooperation rather than competition and addresses environmental issues as global common issues.

This transformation also requires the integration of comprehensive environmental strategies into global diplomatic efforts. The European Union, as a leading actor in green diplomacy, is acting within the framework of the European Green Deal and reshaping its foreign policy around environmental awareness, aiming to become the first carbon-neutral continent by 2050 (Pastukhova et al., 2020, pp. 4-5). In this context, the EU is establishing environmentally based international partnerships and accelerating the energy transition through its strategic initiatives, such as green energy investments, carbon markets, sustainable infrastructure projects, and hydrogen diplomacy (Fedulova & Reziapov, 2024, p. 118; Hosseini, 2024, p. 12). At the global level, green diplomacy has become an increasingly developing area of cooperation. This approach integrates multifaceted environmental crises into the international policy arena by bringing environmental issues to the diplomatic agenda and encourages joint steps for sustainable development. In this context, China is adopting strategies that combine environmental protection and development by investing in green energy projects through multilateral structures, such as the Belt and Road Initiative (BRI) and the Asian Infrastructure Investment Bank (AIIB) (Mahmood et al., 2022, p. 12). Similarly, India is taking an active role in international environmental negotiations by aligning its development priorities with global sustainability goals (Krishnan, 2023, p.226). Green diplomacy has become a critical tool not only for achieving environmental goals but also for energy security, economic stability, and geopolitical balance. However, this transition also presents several challenges. It encompasses multidimensional issues, including the transition from fossil fuel sectors to

renewable energy systems, infrastructure investments, technological adaptation, the establishment of international legal frameworks, and ensuring a just transition (Dikariev & Kovaleva, 2021, pp. 38-39). Therefore, the energy transition needs to be managed carefully, and inclusive solutions must be developed for all stakeholders.

As a result, the transition from traditional energy diplomacy to green diplomacy is transforming not only the type of energy resources but also diplomatic priorities, norms, and forms of international cooperation. This new understanding of sustainability-focused diplomacy has become central to international energy policies, enabling a response to the global climate crisis.

2.3. Connections to International Relations Theories

The green energy transition is intricately linked to various international relations theories, each of which offers a unique lens for understanding the geopolitical and environmental dynamics at play. Realism, liberalism, and constructivism offer distinct frameworks for examining the impact of green energy on global politics, resource competition, and environmental governance. These theories help illuminate the complex interactions between states, non-state actors, and international institutions in the context of renewable energy.

Realism: Resource competition

Realist theory defines international relations as a field of competition between states for security, power, and national interests. This approach treats energy resources as a key component of strategic interests (Mearsheimer, 2001). Traditionally, states with fossil fuel reserves have enjoyed geopolitical dominance in the international system by controlling these resources. However, with the rise of renewable energy technologies, these balances are changing (Goldthau & Westphal, 2019, p. 325).

Green energy, when evaluated from a realistic perspective, is not only an environmental choice but also a new area of power competition. Rare earth elements, which are crucial in the production of green technologies such as wind turbines, solar panels, and electric vehicle batteries, are gaining geopolitical significance in this transformation (Scholten, 2018). Dominance over the supply chain of these resources has become a determining factor in the strategic autonomy of states. In this context, energy-importing countries are trying to gain an advantage in the balance of power by reducing their external dependency through the transition to green energy (Stegen, 2018, p. 76).

Within the framework of realism, the effort to gain superiority in green energy technologies represents a new manifestation of the classical power struggle. States are redefining their positions in the international arena by establishing control over critical minerals, advanced technologies and production capacities. This situation demonstrates that the concept of energy security is being reshaped not only by supply diversity but also by technological and supply chain dominance (Mohapatra, 2017, pp. 693-694).

As a result, the green energy revolution is not only an environmental necessity; it is also becoming a strategic area where states are restructuring their geopolitical interests, as predicted by realist theory. In this context, energy policies cannot be considered independent of the competitive nature of the international system, even if they overlap with environmental goals.

Liberalism: Shared Environmental Governance

Liberal theory is built on the interdependence, cooperation and conflict-preventing role of institutions in international relations. According to this approach, states and non-state actors can rationally cooperate in areas of common interest, and this cooperation is vital in addressing transboundary problems, especially environmental threats (Keohane, 1984, pp. 32-33). The green energy transition serves as a concrete example of such cooperation, highlighting the multilateral functioning of environmental governance structures.

Green energy is a global public good as predicted by liberal theory and requires collective action in the context of combating climate change. In this context, multilateral platforms such as the Paris Climate Agreement, the United Nations Framework Convention on Climate Change (UNFCCC), the European Green Deal and the COP summits provide institutional grounds for inter-state cooperation on reducing carbon emissions, technology transfer and green financing (Falkner, 2016, p.1122; Keohane & Victor, 2016).

Additionally, organizations such as the International Renewable Energy Agency (IRENA) have become key actors in the dissemination of green energy technologies, policy coordination, and capacity-building processes. These institutions not only facilitate the energy transition but also demonstrate the functionality of global governance mechanisms by encouraging information sharing and norm compliance among countries (IRENA, 2023).

The liberal approach is not limited to interstate cooperation; it also emphasizes the role of non-state actors, such as the private sector, civil society, and local governments, in environmental governance processes. The increasing multi-level nature of global environmental governance, especially as companies develop voluntary regulations in line with carbon neutrality targets, is expanding the scope of application of liberal principles (Falkner, 2003, p. 82). Even emerging economies such as China are complying with liberal norms by both becoming parties to multilateral agreements and establishing global partnerships in renewable energy production and export (Liang & Li, 2021, p. 57). As a result, multi-actor and multi-layered governance models in the field of green energy confirm the capacity of liberal theory to establish order through interstate cooperation and international institutions. In this sense, green transformation is not only an environmental paradigm but also a process that strengthens the institutional dimension of international cooperation.

Constructivism: Green Norms and Environmental Foreign Policy Identities

Constructivism argues that international relations are shaped not only by material interests and power relations, but also by norms, identities and collective beliefs. States' foreign policies are not only the result of interest calculations, but also identity-building processes (Wendt, 1999, p.25). In this context, green energy policies have become one of the areas where states reflect their environmental values and normative positions in their foreign policy instruments.

The European Union's positioning itself as an "environmental leader" on a global scale exemplifies the use of green energy policies as an identity-based foreign policy instrument (Adler & Pouliot, 2011). Similarly, China's "ecological civilization" discourse indicates that environmental transformation is not only a technological choice, but also an ideological and cultural structuring process (Prontera, 2024a, p. 27). Such discourses reveal that the transition to green energy can transform the normative foreign policy orientations of states.

The constructivist approach also focuses on the processes by which environmental norms emerge and how these norms affect state behavior. International norms on green energy are constructed around concepts such as sustainability, carbon neutrality, and energy justice, and states strengthen their international legitimacy by complying with these norms (Griffiths, 2019, p. 8). This process demonstrates that energy policies have ceased to be purely technical or economic choices, but have become expressions of normative identity.

The constructivist perspective also emphasizes that energy policies are shaped in interaction with social values, cultural perceptions and identity-based security understandings. Particularly in the Global South, the tensions between the control of resources and demands for social justice and environmental norms provide striking examples of this interaction (Mohapatra, 2017, p. 694). This situation reveals that the green energy transition affects not only interstate relations but also identity relations between society and the state.

Green energy policies are also closely related to states' search for "ontological security". Ontological security refers to a state's need to protect its ongoing identity narratives and self-conception (Giddens, 1991, pp.35-36; Mitzen, 2006, p. 360). In this context, major transformation processes, such as the energy transition, can lead states to restructure their identities within the international system. Ecological security, in this sense, becomes not only an environmental but also an existential security issue (Buzan et al., 1998, pp.71-72). In this context, green energy diplomacy is not limited to energy supply security or climate targets, but has also become a tool for achieving normative foreign policy goals. The European Union's "hydrogen diplomacy" and initiatives such as H2-Diplo are institutionalized examples of this normative strategy (Van de Graaf et al., 2020). As a result, constructivism emphasizes that green energy policies are not only the product of rational interests but also of identities, norms, and discourses. This approach enables a deeper understanding of the meaning of green transformation in international relations, while situating the environmental policies of states within ideological, cultural, and existential contexts.

3. Green Energy Diplomacy Strategies of Global Powers

Green energy diplomacy strategies of global powers are becoming increasingly important in shaping international relations and energy policies. As the world transitions from fossil fuels to renewable energy, major powers such as China, the European Union, and the United States are using green energy policies to increase their geopolitical influence. This shift is not only about reducing carbon emissions, but also about redefining power dynamics on the global stage. The strategies employed by these powers are not

solitary endeavors, but a collaborative effort that encompasses a combination of domestic policy innovations, international collaborations, and competitive interactions that shape global politics.

Global powers are embarking on a transformative journey with green energy diplomacy, employing multidimensional strategies that are shaped by diverse geopolitical priorities, economic capacities, and normative visions. Actors such as the European Union, the United States, China, India, and Turkey view the transition to renewable energy not only as an environmental transformation, but also as a means of restructuring their foreign policy capacities. In this context, each actor's green diplomacy approach shows significant differences in terms of the tools they use, their role definitions in the international system, and the challenges they face. The table below summarizes the green energy diplomacy strategies of the countries in question in a comparative manner, providing a conceptual framework for the analysis detailed in the following subsections.

Table 1. Green Energy Diplomacy Strategies of Global Powers

Country/Actor	Strategic Focus	Diplomatic Instruments	Normative Vision	Challenges
EU	Carbon neutrality, export of norms	Green Deal, CBAM, hydrogen diplomacy	Environmental leadership	Pressure to conform, foreign policy conflicts
USA	Technology leadership	Special climate envoy, R&D investments	Flexible cooperation	Domestic political divisions
CHINA	Infrastructure export, energy security	BRI, AIIB, ecological civilization discourse	Development-centered environmentalism	Urbanization and implementation gap
INDIA	Energy justice, development	Solar alliances, SDG compliance	Discourse of just responsibility	Financial resource constraints
TURKEY	Regional integration, energy transition	YEKA, net zero target, diplomatic potential	Need for strategic alignment	Governance gaps, instability

Note: The table was created by the author based on literature review. See: Pastukhova et al., 2020; Prontera, 2024b; Fedulova & Reziapov, 2024; Krishnan, 2023; Hosseini, 2024; Kat et al., 2024; Schoder & Terçioğlu, 2023.

3.1 European Union and the United States: Green Leadership Claims and Diplomatic Norms

Leadership in global environmental governance is not only about the technical feasibility of environmental goals, but also about how these goals are translated into foreign policy instruments and diplomatic norms. In this context, the European Union (EU) and the United States (US) stand out as two decisive actors in the normative and strategic dimensions of the green energy transition. The EU, with its focus on collective leadership and norm integration, and the US, with its strategic superiority and technology-oriented approach, both play significant roles in shaping the global diplomatic structure. Both powers are transforming environmental sustainability into an effective foreign policy tool, not only at the domestic policy level, but also in areas such as trade, diplomacy, and international governance. Green energy policies have become both an element that reinforces soft power capacity and a means of re-institutionalizing global leadership claims for these two actors.

The US, which has historically been a leader in environmental regulation and multilateralism, appears to have lost this leadership to the EU in recent years due to its reluctance to participate in agreements such as the Kyoto Protocol (Kelemen & Knievel, 2015, p. 958). Although the legal flexibility of the US in environmental policy provides an advantage in proposing environmental standards, this potential often cannot be translated into international norm-building due to domestic political divisions (Hart & Casey, 2024, p. 132). In contrast, the EU integrates environmental policies with its foreign policy, becoming a

normative power that sets the rules in the international system, thanks to a more coherent legal structure and centralized policy-making process (Vogler & Bretherton, 2006, p. 18). The European Green Deal, announced by the EU in 2019, is a comprehensive strategy aimed at achieving the goal of carbon neutrality, as well as a framework that shapes the foreign policy pillar of green energy diplomacy. This strategy involves incorporating environmental standards as a core component of trade agreements with third countries, providing green transformation-based development aid, and reducing energy transition inequalities (Pastukhova et al., 2020; Pandey, 2024, p. 1455). The Carbon Border Adjustment Mechanism (CBAM), in particular, demonstrates that the EU has brought its normative power to the foreign policy scene not only through values but also through economic instruments (Bolgova & Stolyarova, 2024, p. 84).

These EU policies aim to institutionalize environmental standards on a global scale by exporting norms and standards. Green investment agreements with African countries, hydrogen diplomacy projects, and sustainable infrastructure initiatives represent a foreign policy strategy that aims not only at economic interests but also at the global establishment of environmental values. A key component of this strategy is the provision of green transformation-based development aid, which supports the transition of developing countries to more sustainable and environmentally friendly energy systems (Fedulova & Reziapov, 2024, pp. 121-122; Pandey, 2024, p. 1454).

The US, on the other hand, has brought green energy policy back to the center of its foreign policy agenda, especially during the Obama and Biden administrations. With the return to the Paris Agreement, the Biden administration has reintegrated into global climate diplomacy and has clearly stated its goal of leading the energy transition through international cooperation (Prontera, 2024b, p. 165). The US's green diplomacy approach aims to align environmental sustainability with military and economic strategies. In this context, investments in strategic areas such as hydrogen, lithium, and battery technologies both support domestic energy security goals and reinforce global competitive advantage (Hosseini, 2024, pp. 228-229). However, the US remains cautious about entering into new multilateral environmental agreements. This shows that its environmental leadership is shaped more by bilateral cooperation, technological superiority and diplomatic maneuvers. The establishment of the Special Representative for Climate and the bilateral climate diplomacy pursued with developing countries demonstrate that the United States is diversifying its environmental diplomacy tools (Hart & Casey, 2024, p.136; Prontera, 2024b, p. 167).

The Trump administration period marks a period when the United States temporarily distanced itself from its historical leadership in green energy and environmental diplomacy. The decision to withdraw from the Paris Climate Agreement in 2017 was not only a symbolic violation of international agreements but also an open challenge to the concept of environmental multilateralism (Kelemen & Knievel, 2015, p. 947). The Trump administration framed environmental regulations as elements that hinder economic growth and emphasized increasing fossil fuel production, energy independence, and domestic employment under the "America First Energy Plan." This approach has excluded the environment from the security and foreign policy agenda, prioritizing national sovereignty and energy security; climate diplomacy has been replaced by energy nationalism (Hart & Casey, 2024, p. 142). In addition, the limitations on the Environmental Protection Agency's (EPA) powers and the rollback of many environmental regulations enacted during the Obama era have led the United States to retreat to a passive position in global environmental governance. This process has weakened the transatlantic environmental cooperation with the EU and damaged the credibility of the US in the international arena (Schunz, 2016, p. 433).

When evaluated from the perspective of both the EU and the US, although both actors share the goal of being global norm setters in the field of green diplomacy, the strategies they employ and the diplomatic tools they rely on to achieve this goal differ from one another. While the EU is attempting to establish collective leadership by integrating environmental norms into multilateral regimes, the US seeks to rebuild its leadership through strategic superiority, technology transfer, and economic incentive mechanisms. This difference also stems from the nature of domestic political systems and the level of centralization of decision-making processes.

Despite these differences, the potential for transatlantic cooperation is significant. In issues that require collective action, such as climate change, the joint action of the EU and the US can be decisive in terms of global environmental governance. The realization of this potential depends on the parties overcoming domestic political obstacles and developing strategic alignment around standard norms. As a result, the

green leadership claims of the EU and the US are transforming not only their own internal energy transformations but also the normative foundations of the global diplomatic structure. While the EU is advancing on a more institutional and normative path, the US is adopting more flexible, technology-oriented and strategic approaches. These two approaches do not have to conflict; on the contrary, they can complement each other to produce effective and holistic solutions to global problems, such as the climate crisis. This potential for cooperation should inspire hope for the future of global environmental governance.

3.2 China and India: Development-Environment Balance and Alternative Green Strategies

In the evolution of global environmental diplomacy, China and India emerge not only as representatives of developing nations but also as two pivotal players who have crafted innovative strategies. These strategies, unique to each country, present an alternative framework to the universal norm-producing capacity of green diplomacy. They signify the emergence of pluralistic and pragmatic models, challenging the dominance of Western-centric normative approaches.

As two of the world's largest developing economies, China and India face the dual challenge of addressing environmental concerns while promoting economic growth. Both countries have initiated various strategies to balance development with environmental sustainability, focusing on energy security, green development, and renewable energy initiatives. China's Belt and Road Initiative (BRI) plays a significant role in investing in global energy infrastructure, particularly in Africa, thereby increasing China's influence in global energy markets and supporting its green energy diplomacy efforts (Pandey, 2024, p. 1454; Mahmood et al., 2022, pp. 15-16).

Technological developments in renewable energy are at the core of China's strategy, positioning it as a leader in the global energy transition (Bafra, 2024). In this context, China's diplomatic practice is shaped by the concept of ecological civilization, demonstrating a foreign policy identity that blends environmental norms with development and state capacity. China is also diversifying its environmental diplomacy tools by allocating resources to green energy projects through multilateral financial platforms such as the Asian Infrastructure Investment Bank (AIIB).

China's green development model promotes sustainable growth through economic restructuring, industrial optimization, and environmental governance (Li, 2024, p. 546). The country has adopted a carbon neutrality target by 2060 and has made significant investments in wind and solar energy (Li, 2022, p.149). The increase in renewable energy consumption and the implementation of strict environmental policies have positively impacted China's economic sustainability, placing its energy strategies within a more environmentally friendly framework (Wang & Wu, 2024). However, China faces challenges such as rapid urbanization, regional inequalities, and inadequate sustainable urban infrastructure. Current urban practices often fall short of achieving sustainability goals, and the implementation of practical policies is a critical obstacle (Romano, 2014, p. 235). Equal access to renewable energy and ensuring energy justice are also key issues in achieving the Sustainable Development Goals.

India, on the other hand, adopts a cautious yet practical green diplomacy approach that emphasizes the need for environmentally sensitive development. The country advocates for the principle of fair responsibility and differentiated obligations in combating climate change, striving to align its sustainable development goals (SDGs) with its foreign policy (Krishnan, 2023, pp. 227-228). India has targeted significant capacity increases in areas such as solar energy and has focused on technology transfer-based cooperation.

China and India have significant energy security concerns due to their rapid industrialization and increasing energy demands; they continue to actively seek energy resources in regions such as the Middle East and Africa (Hong, n.d.). Both countries employ state-centric and market-oriented approaches simultaneously in this process, aiming to meet their domestic energy needs while also playing a role in international energy diplomacy (Hong, n.d.).

As a result, China's infrastructure-based pragmatic approach and India's normative-based and justice-oriented strategies represent a pluralistic understanding of environmental diplomacy. They propose different development paths against the West's liberal understanding of environmental governance. This suggests that global environmental governance is evolving into a negotiating arena that is not merely an issuance of norms but also one that recognizes and adapts to regional development models. China and India, as significant contributors, are shaping global efforts on sustainable development, further strengthening the multipolar nature of green diplomacy.

3.3 Multilateral Initiatives and Global Norm Building

Climate change, with its effects that transcend boundaries on a global scale, has become not only an environmental problem but also a challenge to the reconstruction of diplomatic norms. In this context, green diplomacy emerges as a field shaped by multilateral initiatives, producing a new global governance paradigm where environmental policies extend beyond the national level and are based on collective norms and institutional mechanisms.

The normative framework of green diplomacy is institutionalized with multilateral initiatives that aim to facilitate the transition to carbon neutrality, expand sustainable energy practices and deepen cooperation between states. In this institutionalization process, institutions such as the Paris Agreement, the Conference of the Parties (COP) processes, the International Renewable Energy Agency (IRENA) and the Asian Infrastructure Investment Bank (AIIB) play key roles (Quitzow et al., 2019, p. 14).

The Paris Agreement has become a historic turning point in the fight against climate change, adopting the goal of keeping the global temperature increase well below 2°C and limiting it to 1.5°C (Wu, 2016). This non-binding but normative text directs states not only to make commitments but also to actively participate in the COP processes that ensure the periodic review of these commitments. In these processes, transparency, accountability, and increased national contribution targets (NDCs) stand out as fundamental principles (Gardiner et al., 2016, p. 12).

COP summits are not limited to countries updating their carbon targets; they also reflect the multidimensional nature of green energy by negotiating topics such as climate finance, technology transfer and just transition. The annual UNFCCC meetings demonstrate that multilateral governance has evolved not only into a decision-making platform but also into a normative stage for climate diplomacy (Wu, 2016; Gardiner et al., 2016, p. 18).

At the institutional level, structures such as IRENA and AIIB undertake the technical and financial dimensions of multilateral norm-building. While IRENA provides capacity building, technical consultancy, and policy guidance in the transition to clean energy, AIIB contributes to the green transformation with financing strategies that support green infrastructure investments, especially in developing countries (Baruch-Mordo et al., 2019; Mahmood et al., 2022, p. 20). These institutions not only provide technical support but also play a critical role in aligning sustainable energy projects with environmental and social norms (Quitzow et al., 2019, p. 15). In the multilateral governance dimension of green diplomacy, global agreements such as the UNFCCC serve not only as texts defining norms, but also as structures that monitor and improve the implementation of these norms. The inclusion of non-state actors in the process transforms green diplomacy into a multi-actor and participatory model. In this context, International Cooperation Initiatives (ICIs) increase the effectiveness of climate policies by bringing together state and non-state actors and pave the way for the formation of structures such as the Global Framework for Climate Action (GFCA) for climate action (Widerberg & Pattberg, 2015, p. 48; Chan & Pauw, 2014, p. 26). However, despite all these multilateral efforts, geopolitical tensions, economic inequalities and implementation gaps sometimes limit the effectiveness of environmental diplomacy (Alam et al., 2024, p. 399). In particular, the voluntary nature of ICIs may cause some actors to avoid their obligations or not fully comply with the norms (Widerberg & Pattberg, 2015, p. 50). Nevertheless, the success of green diplomacy depends not only on the commitments themselves, but also on the financial resources, institutional capacity, and international trust that will ensure their implementation.

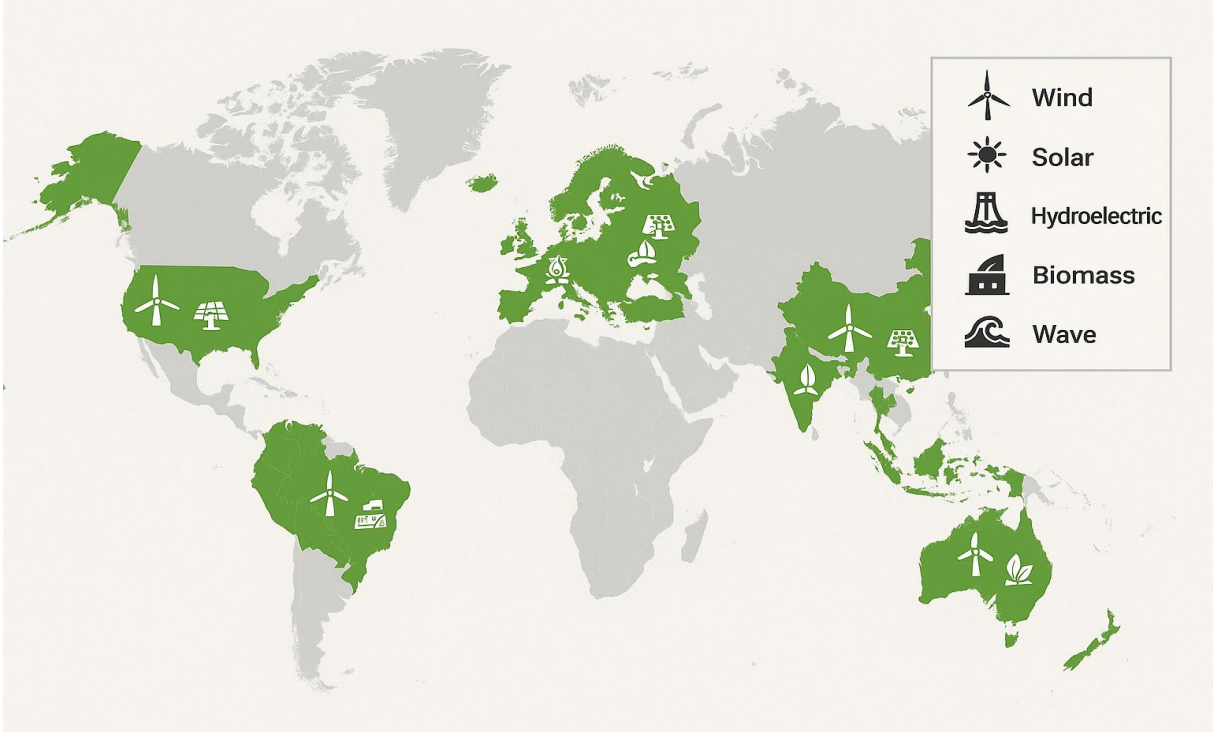
As a result, the institutionalization of green energy diplomacy creates a diplomatic space where global environmental norms are produced, implemented and legitimized through collective efforts. Mechanisms such as the Paris Agreement, COP processes, IRENA and AIIB serve not only as technical solutions but also as diplomatic frameworks that ensure the continuity of global norms. In this respect, multilateral initiatives are not only tools in the fight against climate change, but also architects of the global green order.

4. International Competition, Cooperation, and Future Diplomatic Orientations

In today's international system, where environmental challenges are becoming increasingly complex and multidimensional, green energy diplomacy has emerged as a new focal point of international relations. The global impact of ensuring an energy transition in line with the Sustainable Development Goals is not only a technological or environmental necessity; it has also become an area of competition and cooperation directly related to the foreign policy visions of states. In this context, green energy diplomacy

offers a new diplomatic paradigm that requires states to establish a delicate balance between their national interests and global responsibilities, emphasizing the urgency and importance of this diplomatic shift.
Green energy diplomacy has evolved not only into an environmental policy but also a means for major powers to redefine their geopolitical influence. The role of renewable energy in shaping the future of international relations is significant, as actors such as the United States, the European Union, China, and India are opening up a new space in the global power struggle by incorporating these resources into their foreign policy strategies. In this context, the geographical spread of green energy investments can be evaluated as a spatial expression of not only environmental but also economic and strategic priorities. The map presented below visualizes the green energy diplomacy networks of the actors in question, shaped by resources such as solar, wind, hydroelectric, biomass and wave energy, and provides an overview of the spatial projection of their diplomatic spheres of influence.

Map 1: Geopolitical Mapping of Renewable Energy Diplomacy



Geopolitical Mapping of Renewable Energy Diplomacy. Map designed by the author based on publicly available strategic reports and secondary literature. Data synthesis includes insights from Pastukhova et al. (2020), Kat et al. (2024), Schoder & Terçioğlu (2023), Krishnan (2023), and Hosseini (2024).

4.1 Competition in Green Diplomacy: Politicization of Energy and Spheres of Influence

The transformation of energy policies beyond environmental concerns into a geopolitical instrument marks a profound shift in contemporary international relations. The global transition from fossil fuels to renewable energy sources is not only a technical issue of energy security, but also a strategic competition ground where spheres of influence are being redefined. Green diplomacy has become the dominant tool of this new era; power struggles between countries are now being conducted through carbon neutrality targets, green technologies, and sustainable infrastructure investments.
The policies of major powers, such as China, the European Union, and the United States, in the field of green diplomacy encompass not only environmental commitments but also geopolitical objectives, including technological leadership, market dominance, and global norm establishment. These powers utilize tools such as the supply of critical minerals, innovation in renewable energy technologies, and cross-border carbon regulations in their strategies for energy transition, aiming to both gain economic superiority and establish new normative effects (Prontera, 2024a, p. 48; Sattich & Huang, 2023, p. 162). This situation demonstrates that environmental sustainability has become a key focus of international politics. The politicization of energy should also be analyzed within the framework of the concept of sphere of influence (SOI). According to Etzioni (2015), SOIs are areas where states build their economic and ideological influence in other regions, and energy investments play an important role in determining

these areas. In this context, China's "Belt and Road" initiative combines an environmental discourse with infrastructure investments, thereby increasing its economic influence in Asia and Africa. Meanwhile, the USA strengthens its global leadership position with its R&D-focused climate technology strategy. The European Union's strategy of carrying its green normative power outwards through carbon border taxes and sustainable investment agreements is also a reflection of this competition on the European front.

Competition for green energy is observed not only among superpowers but also at the regional level. Turkey, strategically positioned at the center of energy transit routes, has leveraged its geographical location to turn energy diplomacy into a key foreign policy tool, developing a strategy to enhance its external influence through energy supply security (Uludağ et al., 2013, p. 110). This underscores the strategic importance of Turkey in the global energy landscape. Russia, on the other hand, faces challenges in adapting its diplomatic capacity, which is primarily based on fossil fuels, to the transition to a green economy. However, it still maintains its geopolitical influence through energy exports.

Although Turkey is not yet a norm-setting actor on a global scale in the context of green energy diplomacy, it exhibits a rising intermediary power profile on a regional scale, thanks to its strategic geographical location, role in energy transit routes, and renewable energy investments that have gained momentum in recent years. The strategic vision shaped within the framework of the National Energy Efficiency Action Plan and Renewable Energy Resource Areas (YEKA) projects stands out as a fundamental basis for Turkey to achieve its 2053 Net Zero Emission target. These initiatives make multidimensional contributions to targets such as reducing carbon emissions, increasing energy efficiency, and transitioning to sustainable energy systems (Melikoğlu, 2016, p. 8; Kat et al., 2024).

Turkey's energy policies are characterized by a tendency to shift towards renewable resources, especially in electricity generation. The goal is to provide 30% of electricity from renewable sources by 2023; significant progress has been made towards this goal with YEKA projects based on wind and solar energy. At the same time, a policy trajectory has been adopted to phase out coal from energy generation and reduce carbon emissions in the energy sector by 50% compared to 2018 levels by the early 2030s (Kat et al., 2024). The success of this process depends on the effective integration of policy instruments such as renewable energy subsidies, the removal of fossil fuel subsidies, and access to green finance (Schoder & Terçioğlu, 2023, p. 348).

However, Turkey's energy transition process also presents serious challenges. The sustainability of this transformation is threatened by factors such as limitations in accessing financial resources required for green transformation, the risk of current investments in fossil fuels becoming "stranded assets", and technological adaptation processes (Schoder & Terçioğlu, 2023, p.357). In this context, green energy diplomacy should be structured not only in terms of technical capacity but also through transparent policy communication, a determined political will, and compliance with international climate regimes. Turkey's declaration of commitment to the carbon neutrality goal, as a party to the Paris Agreement, is a significant foreign policy message in this direction.

In conclusion, Turkey's foreign policy orientation towards green energy suggests a capacity that is still in development. However, the energy transition should be addressed not only as a national development agenda but also in a diplomatic context based on shared responsibility in combating global climate change. Turkey's more effective integration with the EU Green Deal, Carbon Border Adjustment Mechanism (CBAM) and multilateral green finance instruments will not only provide a competitive advantage for exporting sectors but also transform Turkey into a more visible and influential actor in the green diplomacy scene, offering a promising future in this field.

The competitive dynamics in green diplomacy, while creating a contradictory effect in international cooperation processes, also present potential benefits. On the one hand, they foster an innovative environment that accelerates technological development and sustainable solutions. On the other hand, they can limit the effectiveness of multilateral climate agreements due to the conflicting nature of strategic competition. For instance, rising tensions between China and the West make it difficult to reach an agreement on issues such as climate finance, technology transfer, and responsibility sharing. However, some studies highlight the constructive aspects of this competition, arguing that it can increase the supply of global public goods in the green transformation and create motivation for countries to 'ratchet up' their commitments.

This delicate balance between competition and cooperation in the energy transition process stands out as one of the fundamental factors that will determine the future of international environmental governance. The achievement of carbon neutrality targets is directly related not only to technical

competence or financial capacity, but also to the extent to which it can be integrated with the principles of trust, transparency and fair cooperation in diplomacy. In this context, green diplomacy will continue to be a crucial area for the future of sustainable development, as well as a new face of global competition. The urgency of these principles cannot be overstated in the journey towards carbon neutrality.

4.2 Cooperation in Green Diplomacy: The Search for a Common Future and Multilateralism

Global issues like climate change, biodiversity loss, and environmental degradation have not only made international cooperation a necessity but have also reshaped the character of green diplomacy. This evolution now includes not just the traditional state-based approach, but also new forms of interaction that actively involve non-state actors. In this context, multilateralism and polylateralism emerge as two complementary paradigms that define the environmental diplomatic orientations of the 21st century.

Multilateralism, a model of cooperation facilitated through international agreements and institutionalized platforms, is designed to foster a global consensus and legitimacy. Key agreements like the Kyoto Protocol, the Paris Agreement, and the Glasgow Climate Pact have established structures that allow states with diverse levels of development and political structures to collectively combat climate change (Alam et al., 2024, pp. 401-403). These agreements, in particular, have aimed to establish a more equitable distribution of responsibilities between developed and developing countries, thereby playing a crucial role in the fight against climate change.

The multilateralism model provides an inclusive governance framework that encompasses not only climate commitments but also the sharing of technological knowledge, the mobilization of financial resources, and capacity-building goals. The success of the Paris Agreement, a shining example of the potential of multilateralism, depends not only on the production of norms but also on countries taking concrete steps to reduce carbon emissions, accelerate the transition to renewable energy, and integrate sustainable development goals (Shi, 2024, p. 241; Sharma, 2024, pp. 30-31).

In contrast, polylateralism, as conceptualized by Geoffrey Wiseman, integrates non-state actors—such as civil society organizations, the private sector, local governments, and international organizations—into the diplomatic process, thereby providing flexibility and adaptability to diplomacy. This inclusion of non-state actors empowers them to make significant contributions to the management of complex problems, such as climate change. At this point, the innovation capacity provided by polylateral structures is crucial in terms of filling normative gaps and accelerating diplomatic processes (Shi, 2024, pp. 243-244).

India's environmental diplomacy practice, which focuses on sustainable development and plays an active role in international climate negotiations, is an example of how polycentrism can provide capacity building for developing countries (Krishnan, 2023, p. 230). Similarly, the European Union's strategic approach, which integrates the climate dimension into its foreign and security policies, offers a model that strengthens multilateralism at both normative and institutional levels. The environmental-based cooperation between China and India is noteworthy in demonstrating that constructive multipolarity is possible even among large emitters (Tänzler & Carius, 2013, p. 264; Qiao, 2014, p. 328).

The increasing role of non-state actors has also triggered the development of international cooperation initiatives (ICIs). These structures provide functional tools for integrating local solutions into global climate goals, while paving the way for steps to balance the unequal distribution of resources, such as knowledge, finance, and technology (Alam et al., 2024). The fact that polylateral approaches enable civil society, municipalities, and the private sector to intervene in environmental problems is a significant transformation that strengthens international cooperation on a horizontal level. However, the practical limits of these two models cannot be ignored. Although multilateralism produces structural legitimacy, it may not facilitate rapid environmental interventions due to the slow pace of decision-making processes. The flexibility and innovation of polylateralism, on the other hand, may pose sustainability problems due to its limited implementation power and lack of binding legal instruments. For this reason, the most effective results in green diplomacy are achieved with hybrid models that blend the strengths of both approaches, offering a reassuring path forward. The sustainable economic diplomacy practices of countries such as Indonesia provide an important example of how this hybrid model can work on the axis of development, environment, and cooperation (Surez, 2024, p. 265). In conclusion, considering the transboundary nature of the climate crisis and the multi-layered structure of global development goals, the integration between multilateralism and polylateralism plays a decisive role in making green diplomacy an effective and inclusive mechanism. Within the changing dynamics of the international

system, this hybrid approach offers a sustainable and adaptable diplomatic framework for the future of environmental governance.

4.3 Diplomatic Orientations for the Future: Inclusive, Resilient, and Innovative Approaches

The green diplomacy of the future must not only be a technical coordination area, but also a strategic governance model that addresses issues such as climate change, energy transition and sustainable development with a holistic approach. In this model, climate concerns must first be integrated into the center of foreign policy agendas. Increasing environmental risks are now becoming a fundamental element not only of environmental policies but also of development aid, humanitarian intervention policies and regional security strategies (Tänzler & Carius, 2013).

Secondly, sustainable economic diplomacy is gaining a central place among future orientations. Countries such as Indonesia are aligning their environmentally friendly development policies with foreign relations, pursuing both development goals and green energy transformation simultaneously (Suarez, 2024). This situation also highlights the integration of environmental issues with foreign trade, development, and financing policies.

Finally, the evolving nature of green diplomacy necessitates diversifying strategic alliances beyond traditional forms of bilateral diplomacy. In this new era, collaborations with non-state actors enable both the development of effective practices at the local level and the expansion of diplomatic spheres of influence globally. For example, carbon trading mechanisms developed through public-private partnerships or intercity climate networks show that green diplomacy is no longer a state-centered area. As a result, green diplomacy is evolving into a hybrid form of diplomacy that simultaneously includes both cooperation and competition. This dynamic structure tests not only the capacity of international actors to achieve environmental goals, but also their normative leadership, strategic foresight and crisis management capabilities, highlighting the need for preparedness and adaptability. In this context, the future of green diplomacy hinges on the development of diplomatic mechanisms that are compatible with the principles of transparency, inclusiveness, and equality on a global scale.

EVALUATİON AND CONCLUSİON

Renewable energy, a cornerstone of environmental sustainability, is also a key player in the global power struggle. The shift from fossil fuels to sustainable energy sources is not just a change in energy supply, but a transformation that is reshaping the foreign policy orientations, economic priorities, and diplomatic relations of states. Green energy is no longer just a development tool; it is a geopolitical leverage. This transformation is positioning environmental diplomacy at the intersection of multilateral cooperation and strategic competition.

Major actors, such as the US, China, and the European Union, are striving to establish leadership in renewable energy technologies, gain supply chain dominance, and set norms, not only in the energy field but also to expand their diplomatic spheres of influence. The foreign policy models developed by these actors demonstrate that green energy diplomacy is not only a matter of environmental governance but also a tool of hegemony. In particular, tools such as technology transfer, carbon tax regulations and global market access make the competitive aspects of environmental policy visible; in this context, green energy is becoming a stage where national power is redefined.

The geopolitical consequences of the shift towards renewable resources are significant and inevitable. The vulnerabilities created by dependence on fossil fuels, as evidenced in the Russia-Ukraine war, have accelerated the transition towards renewable resources. This shift has established a direct link between energy security strategies and foreign policy priorities. For countries aiming to bolster their energy security, resources such as solar, wind, and hydroelectricity are not just technical solutions, but also strategic gains in autonomy and foreign policy power.

Within these dynamics, the simultaneous adoption of multilateralism and polylateralism offers a governance platform more suitable for the multi-actor structure of environmental problems. The inclusion of states, as well as the private sector, civil society and local governments in the diplomatic process, increases legitimacy both in norm production and in practice and enables the emergence of more inclusive mechanisms. However, the effectiveness of these structures is still limited by structural difficulties: Financial inequalities, obstacles to technology transfer and international trust deficits may prevent green diplomacy from becoming an inclusive system.

In this context, Türkiye's position can be briefly addressed; it has the potential to become a more prominent actor in green diplomacy, thanks to its energy transition goals and geographical advantages. The 2053 Net Zero Emission target, along with renewable energy investments and regional energy projects, can contribute to Turkey gaining a more effective position in multilateral platforms. At the same time, practices such as the National Energy Efficiency Action Plan and YEKA projects are concrete indicators of Turkey's efforts to strengthen its sustainable energy infrastructure. This potential of Turkey in green diplomacy should instill a sense of hope and optimism about the future. However, the sustainable and effective use of this capacity is possible not only with technical investments, but also with domestic policy stability, a transparent governance approach and a balanced strategy in foreign policy. Turkey's ability to utilize environmentally based diplomatic tools more effectively will both enhance its national contribution to the fight against the climate crisis and lay the groundwork for new diplomatic initiatives based on multilateral cooperation in foreign policy.

In conclusion, the interaction between green energy and diplomacy points to a multidimensional process that redefines the international system. The fundamental dilemma that emerges in this process is whether green energy will be a tool of hegemony or a catalyst that reinforces multilateral cooperation. In reality, these two orientations do not exclude each other; instead, they reflect strategic realities that progress in parallel. The international community's ability to produce adequate responses to environmental crises depends on striking a balance between these two dynamics and the dissemination of environmental norms. A new foreign policy vision, shaped around the principles of sustainability, equality, and global solidarity, will be key to protecting both national interests and shared human values.

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