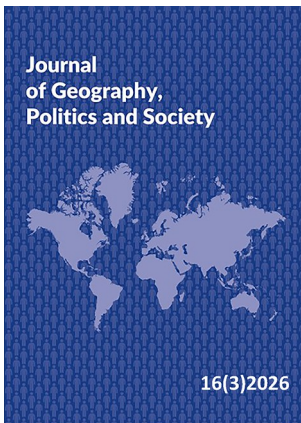




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ENERGY, RESOURCES, AND POWER: RETHINKING DETERMINISM IN CONTEMPORARY GEOPOLITICS

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Abstract

This article examines the role of energy and natural resources as structuring factors in contemporary geopolitics and geostrategy. Building on classical geopolitical thought, it explores how material conditions have historically shaped spatial configurations of power, while remaining analytically implicit in traditional frameworks. The study develops the concept of energy-resource determinism as a heuristic approach for understanding how the access to, control over, and distribution of resources condition state behaviour, strategic interaction, and patterns of asymmetry in the international system. Through a conceptual and comparative analysis, the article traces the transition from geographically oriented determinism to more explicit energy- and resource-centred perspectives. Particular attention is paid to the role of infrastructure, asymmetric dependence, and energy security in shaping contemporary geostrategic dynamics. The analysis also considers how ongoing transformations, including the global energy transition and the increasing importance of critical materials, are reconfiguring the existing patterns of dependency and power.

Rather than proposing a formalised theory, the article offers a structured analytical framework that highlights the relevance of material constraints in international relations and political geography. It aims to contribute to ongoing debates on geopolitics by providing a conceptual foundation for further theoretical development and empirical research.

Key words

geopolitics; political geography; energy security; resource dependency; geostrategy; infrastructure; energy transition.

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1. Introduction

Geopolitics, as a field of inquiry and analytical practice, has long been concerned with identifying relatively stable factors that shape state behaviour and structure the international system. From its classical foundations at the turn of the twentieth century to its contemporary reformulations, geopolitical thought has consistently sought to

explain power, conflict, and strategy through enduring material conditions rather than through short-term political contingencies alone. Within this tradition, various forms of determinism—most notably geographical and spatial determinism—have played a central, though often contested, role.

The classical geopolitical theory, developed at the turn of the twentieth century, was primarily concerned with the relationship between space and power. Authors such as Friedrich Ratzel, Rudolf

Kjellén, Halford J. Mackinder, Alfred Thayer Mahan, and Nicholas J. Spykman attempted to identify spatial configurations that conferred strategic advantage or vulnerability. While their theories are commonly categorised as examples of geographical or spatial determinism, a closer examination reveals that material and resource-related considerations were deeply embedded within their conceptual frameworks. Territory mattered not as an abstract entity, but as a carrier of productive capacity, strategic depth, and access to essential material inputs (Ratzel, 1897; Mackinder, 1904).

During much of the twentieth century, the rise of political realism and international political economy shifted analytical attention away from classical geopolitics, often criticising its deterministic tendencies. Nevertheless, the underlying concern with material constraints did not disappear. Instead, it was reframed through concepts such as national power, economic capacity, and security dilemmas (Morgenthau, 1948; Waltz, 1979). In this context, resources continued to play a central role, albeit often implicitly and without systematic theoretical elaboration.

In recent decades, renewed attention to resource scarcity, supply disruptions, and strategic dependencies has prompted a reconsideration of deterministic explanations in geopolitics. Rather than reviving rigid or mechanistic models, contemporary scholarship increasingly recognises determinism as structural and probabilistic, shaping the range of feasible strategic choices rather than dictating specific outcomes (Strange, 1988; Klare, 2008). This shift creates analytical space for revisiting classical geopolitical thought and reassessing its latent material logic.

Against this background, the concept of energy-resource determinism has re-emerged as a useful analytical lens for understanding contemporary geopolitics and geostrategy. Unlike earlier, more rigid forms of determinism, energy-resource determinism does not posit a direct or mechanistic causal relationship between material factors and political outcomes. Rather, it conceptualises energy and natural resources as structural conditions that delimit the range of strategic options available to states, shape patterns of dependency and asymmetry, and influence the long-term configuration of power relations. In this sense, determinism is understood as probabilistic and structural, rather than absolute or reductionist.

The purpose of this article is not to propose a new or comprehensive geopolitical theory, but to offer a conceptual and comparative examination of energy-resource determinism as an analytical approach. By tracing its intellectual roots in classical

geopolitical thought and examining its relevance to contemporary geostrategic dynamics, the article seeks to gradually introduce the logic of resource- and energy-conditioned geopolitics. Particular attention is paid to the implicit deterministic elements present in classical theories and to their transformation under modern conditions characterised by globalised energy markets, complex infrastructures, and technological change.

By adopting this gradual and contextual approach, the article aims to provide a theoretically informed yet accessible framework suitable for academic instruction and introductory scholarly discussion. In doing so, it lays the conceptual groundwork for more advanced theoretical developments that may be explored in future research, while remaining firmly within the bounds of a descriptive and analytical contribution. This discussion is particularly relevant for political geography, where spatial configurations of resources and infrastructure increasingly shape regional and global power relations.

2. Theoretical Basis: Resources, Classical Geopolitics, and the Emergence of Energy Determinism

2.1. Natural Resources and Power

Natural resources have long constituted a fundamental component of power in international relations. Long before the emergence of modern industrial economies, access to land, water, and raw materials shaped patterns of settlement, economic productivity, and military capability. In the context of the modern state system, resources underpin industrial development, technological innovation, and the logistical foundations of military power, thereby influencing states' relative positions within the international hierarchy (Gilpin, 1981).

From a structural perspective, resources do not automatically translate into power, but they create the material conditions under which power can be generated and sustained. Resource abundance can enhance strategic autonomy, while resource scarcity often imposes constraints that shape foreign policy behaviour. States endowed with critical natural resources typically enjoy greater flexibility in pursuing independent strategies, whereas resource-poor states are more likely to rely on trade, alliances, or external guarantees to compensate for material deficits.

Importantly, the strategic value of resources is historically contingent. Changes in technology, production systems, and patterns of consumption

continually redefine which resources are considered essential. Nevertheless, the broader relationship between material endowment and political capacity remains constant. Even in highly globalised systems, where markets facilitate exchange, the underlying distribution of resources continues to shape structural power relations and long-term strategic possibilities (Strange, 1988).

2.2. Access, Control, and Dependency

The geopolitical significance of resources lies not only in their physical presence but also in access and control. Secure access to essential materials is often more important than formal ownership, particularly in an interconnected international economy. Consequently, states have historically sought to secure supply routes, trading networks, and institutional arrangements that guarantee predictable access to resources beyond their borders (Mahan, 1890).

Control over resources can take multiple forms. Territorial sovereignty over resource-rich areas represents the most direct form, but control may also be exercised through political influence, economic leverage, technological dominance, or regulatory frameworks. Control over extraction, transportation, and distribution allows states to shape the conditions under which resources circulate, often conferring strategic advantages that exceed those derived from ownership alone.

Dependency arises when access to essential resources is mediated by external actors. While interdependence is a normal feature of international relations, asymmetric dependency creates vulnerabilities that can be exploited for political or strategic gain. Such dependencies influence long-term strategic planning, prompting states to pursue diversification, stockpiling, or substitution strategies even when these entail higher economic costs (Keohane & Nye, 1977).

2.3. Resource Asymmetry as a Source of Tension

The uneven spatial distribution of natural resources generates structural asymmetries that frequently translate into geopolitical tension. Resource asymmetry encompasses not only differences in availability but also disparities in technological capacity, access mechanisms, and control over supply chains. These asymmetries shape patterns of cooperation and conflict by creating divergent interests between resource-rich and resource-dependent actors (Klare, 2008).

Historically, resource asymmetries have contributed to imperial expansion, territorial competition, and the formation of spheres of influence. In contemporary contexts, they underpin disputes over trade conditions, transit arrangements, and regulatory regimes. Although resource-driven tensions do not inevitably result in open conflict, they often manifest as persistent strategic friction, influencing diplomatic behaviour and long-term security planning.

Taken together, these dynamics highlight the importance of resources as structural factors in international relations. While not deterministic in a mechanical sense, resource distribution and access condition the strategic environment within which political decisions are made. This broader resource-based logic provides a necessary conceptual bridge to the examination of classical geopolitical theories, where similar material concerns were embedded within spatial and territorial frameworks.

These dynamics of resource distribution, access, and dependency can be conceptualised as structural features of the international system rather than as linear causal relationships. As illustrated in Figure 1, resource asymmetry generates interconnected patterns of control, mediation, and vulnerability in which transit zones play a critical role in shaping flows and access. At the same time, dependent actors are not passive, as feedback mechanisms, strategic responses, and political pressures continuously reshape these relationships.

The figure illustrates the structural relationship between resource-rich regions, transit and access zones, and resource-dependent regions. It highlights how uneven resource distribution generates patterns of control, mediation, and vulnerability, without implying a mechanistic causal chain.

Taken together, these dynamics illustrate that natural resources constitute a fundamental, though often understated, dimension of international relations. They operate as structural conditions that shape power relations, strategic behaviour, and patterns of dependency over time. While classical geopolitical theories tended to frame these dynamics primarily through spatial and territorial lenses, the underlying material logic was always present.

This broader resource-based perspective provides a necessary conceptual bridge toward a more focused discussion of specific categories of resources that have acquired heightened strategic relevance in modern geopolitics. In the following sections, this general framework will be further refined to examine how particular types of resources—most notably those linked to modern industrial and technological systems—have reshaped geopolitical and geostrategic thinking.

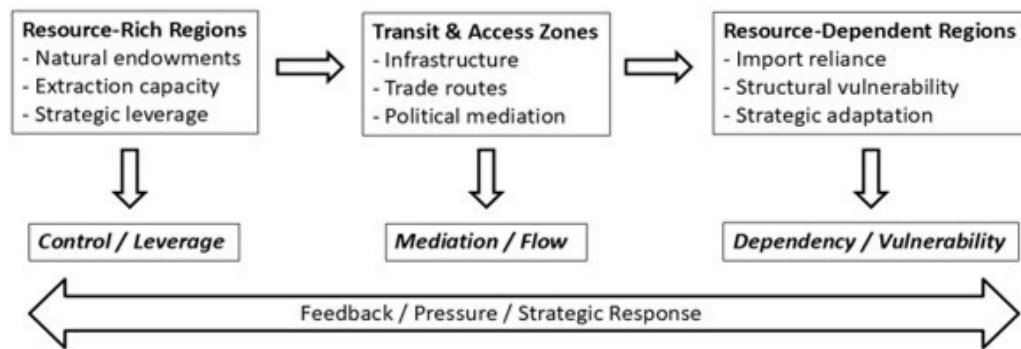


Fig. 1. Resource asymmetry, access, and dependency in the international system.

Source: Author's elaboration.

2.4. Classical Geopolitical Theories and Implicit Resource Determinism

Classical geopolitical theories emerged in a historical context marked by industrial expansion, imperial competition, and the consolidation of the modern state system. Their primary objective was to identify enduring structural factors that could explain patterns of power, security, and strategic rivalry. While these theories are most commonly associated with spatial and territorial determinism, a closer reading reveals that material and resource-related considerations were deeply embedded within their core assumptions. This latent determinism, though rarely articulated explicitly, constituted an essential component of classical geopolitical reasoning.

The resource-related deterministic elements embedded in classical geopolitical theories can be summarised comparatively, as shown in Table 1, which highlights how leading authors implicitly linked space, power, and material control.

Friedrich Ratzel's conception of the state as a living organism constituted one of the earliest

systematic attempts to link political power to material and spatial conditions. In Ratzel's organic theory, states were understood as entities whose growth and survival depended on access to space and resources necessary for economic and demographic expansion (Ratzel, 1897). Although often criticised for biological reductionism, Ratzel's framework clearly articulated the idea that material constraints shape political development.

Rudolf Kjellén further developed this perspective by conceptualising the state as a geopolitical organism embedded within a specific territorial and material environment. For Kjellén, geopolitics was inseparable from geoeconomics and demography, as the strength of the state depended on its capacity to mobilise territory, population, and resources in a coherent manner (Kjellén, 1916). Both authors thus introduced a form of latent determinism in which material and spatial conditions structured political possibilities without dictating specific outcomes.

Halford J. Mackinder's Heartland theory is widely regarded as a foundational contribution to geopolitical thought. At its core, the theory posits

Tab. 1. Resource-Related Deterministic Elements in Classical Geopolitical Theories

<i>Author</i>	<i>Core Concept</i>	<i>Latent Deterministic Element</i>
Ratzel	Lebensraum	Material and spatial constraints shaping state expansion
Kjellén	State as a Geopolitical Organism	Territorial and resource-based conditioning of state power
Mackinder	Heartland	Control over a resource-rich continental core
Mahan	Sea Power	Access to trade and strategic supply routes
Spykman	Rimland	Buffer zones and transit control

Note: The deterministic elements identified here are latent in nature and should not be understood as explicit energy determinism, which emerges only in later historical and theoretical contexts.

Source: Author's elaboration based on Ratzel (1897), Kjellén (1916), Mackinder (1904), Mahan (1890), and Spykman (1942).

that control over the Eurasian landmass—particularly its central, continental core—confers decisive strategic advantages (Mackinder, 1904). Although Mackinder framed his argument primarily in terms of geography, accessibility, and mobility, the strategic significance of the Heartland was inseparable from its material potential.

The Heartland was not merely a territorial abstraction; it represented a space endowed with vast natural resources, agricultural capacity, and industrial potential. Mackinder's concern with railways, internal lines of communication, and continental self-sufficiency reflected an implicit awareness of the relationship between resource endowment and power projection. In this sense, territorial control functioned as a proxy for access to and consolidation of material resources necessary for sustained geopolitical dominance.

The latent determinism in Mackinder's theory lies in the assumption that material self-sufficiency reduces strategic vulnerability. A power capable of mobilising the resources of the Heartland would be less dependent on maritime trade and external supply routes, thereby altering the structural balance of power. While Mackinder did not explicitly articulate a resource-based theory, his conceptualisation of the Heartland implicitly linked geography, resources, and strategic autonomy.

Alfred Thayer Mahan's theory of sea power shifted the analytical focus from continental space to maritime domains. For Mahan, control of the seas was essential to national greatness, economic prosperity, and military strength (Mahan, 1890). His emphasis on naval power, trade routes, and overseas bases is often interpreted primarily in military terms; however, the underlying logic of his theory was deeply material.

Maritime power enabled access to distant markets and resources, ensuring the uninterrupted flow of raw materials and goods necessary for industrial economies. Sea lanes were not valuable in isolation, but as conduits for commerce and supply. Mahan's insistence on the protection of trade routes and strategic chokepoints reflected a recognition that economic vitality—and by extension national power—depended on secure access to external resources.

The deterministic element in Mahan's thought is therefore relational rather than spatially fixed. Power was determined not by possession of territory alone, but by the ability to control the networks through which resources circulated. Maritime dominance translated into structural leverage over resource flows, reinforcing the strategic importance of naval supremacy in an increasingly interconnected world.

Nicholas J. Spykman's Rimland theory can be understood as a synthesis and correction of earlier geopolitical models. Rejecting the primacy of the Heartland, Spykman argued that the coastal fringes of Eurasia constituted the decisive arena of global power (Spykman 1942). These regions, characterised by demographic density, economic dynamism, and geopolitical fragmentation, were inherently contested and strategically volatile.

From a latent resource-determinist perspective, the Rimland's significance derived from its dual role as both a zone of production and a corridor of transit. It connected continental interiors with maritime spaces, facilitating the movement of goods, resources, and influence. Control over the Rimland therefore implied control over access points, supply chains, and strategic interfaces between land and sea.

Spykman's emphasis on balance and containment reflected an implicit understanding of dependency and vulnerability. States located within or adjacent to the Rimland were simultaneously empowered by access to resources and constrained by exposure to external pressures. The determinism in Spykman's theory lies in the structural tensions generated by this intermediary position, which predisposed the Rimland to persistent competition and conflict.

2.5. Classical Geopolitics and the Limits of Explicit Determinism

Despite their shared focus on enduring structural factors, classical geopolitical theories generally refrained from explicitly theorising resources as autonomous drivers of international behaviour. This omission was partly conceptual and partly historical. At the time these theories were formulated, resource access was often assumed to follow naturally from territorial control or imperial expansion, rendering explicit resource analysis unnecessary.

Nevertheless, the material logic underpinning classical geopolitics is unmistakable. Geography mattered because it shaped access to resources, markets, and strategic depth. Maritime power mattered because it secured supply lines and economic resilience. Buffer zones mattered because they mediated access and reduced vulnerability. In this sense, classical geopolitics was implicitly deterministic, even if its determinism remained embedded within spatial and territorial categories.

Recognising this latent determinism allows for a more nuanced understanding of both the strengths and limitations of classical geopolitical thought. It also provides a conceptual bridge to contemporary

approaches that foreground material constraints more explicitly. As the nature of strategic resources has evolved and the mechanisms of access and control have grown increasingly complex, the underlying deterministic logic has not disappeared but has been reformulated.

The examination of classical geopolitical theories demonstrates that determinism has long been a foundational, if understated, element of geopolitical analysis. While early theorists framed their arguments primarily in spatial terms, their concern with power, security, and autonomy was ultimately rooted in material conditions. This latent resource logic sets the stage for a more explicit consideration of how specific categories of resources have come to shape modern geopolitical and geostrategic dynamics.

The following section builds on this insight by tracing the conceptual transition from geographically oriented determinism to more resource- and energy-centred frameworks, reflecting the changing material foundations of power in the contemporary international system.

2.6. From Geographical to Energy-Resource Determinism

The shift from classical geographical determinism to contemporary energy-resource determinism reflects a profound transformation in the material foundations of power within the international system. While early geopolitical theories emphasised territory, location, and spatial configuration as primary determinants of strategic advantage, industrialisation and technological change progressively redefined what made space geopolitically significant. Geography did not cease to matter; rather, its importance became increasingly mediated through access to specific material and energy resources essential for economic production and military power.

The emergence of industrial economies fundamentally altered the relationship between territory and power. In pre-industrial contexts, land was primarily valued for its agricultural productivity and capacity to sustain populations. Industrial societies, by contrast, depended on concentrated material inputs capable of sustaining mechanised production, transportation, and warfare. As a result, the strategic value of territory became inseparable from its capacity to provide or facilitate access to such inputs (Hobsbawm, 1962; Landes, 1969).

Coal was the first resource to acquire systemic geopolitical importance under industrial conditions. Its central role in powering factories, railways, and

steam-powered navies transformed it into a strategic asset whose availability directly affected national power and military capability. States with secure access to domestic coal reserves enjoyed advantages in industrialisation and mobilisation, while those without were compelled to rely on imports or external supply routes (Pomeranz, 2000). Although classical geopolitical theorists rarely treated coal as a distinct analytical category, their emphasis on industrial capacity and internal lines of communication implicitly reflected its importance (Mackinder, 1904).

This period marked the early stages of a transition from spatial determinism to resource-conditioned geopolitics. Territory continued to matter, but primarily insofar as it enabled access to the material foundations of industrial power.

The rise of oil in the first half of the twentieth century constituted a decisive break with earlier resource regimes. Unlike coal, oil possessed a higher energy density, greater flexibility, and superior suitability for mobile warfare. Its adoption transformed military logistics, naval strategy, and air power, making access to oil a central concern of state strategy and foreign policy (Yergin, 1991).

The geopolitical implications of oil exposed the limitations of territorially focused frameworks. Oil reserves were unevenly distributed, often located far from centres of consumption, and required complex systems of extraction, transportation, and refining. As a result, strategic vulnerability increasingly stemmed from dependence on external energy supplies rather than from territorial weakness alone. Control over oil-producing regions, transit routes, and maritime chokepoints emerged as critical objectives, shaping alliance structures and strategic planning throughout the twentieth century (Klare, 2001).

These developments contributed to the gradual conceptual elevation of energy from a background economic factor to a central strategic variable. Energy began to function as a structuring condition of geopolitical behaviour, influencing not only military capabilities but also diplomatic alignments and long-term security strategies.

The post-war expansion of natural gas and nuclear energy further reinforced the transition toward energy-resource determinism. Natural gas, dependent on fixed pipeline networks or specialised liquefaction infrastructure, introduced new forms of geographic rigidity and long-term dependency. Pipeline routes linked producers, transit states, and consumers in enduring relationships that were difficult to alter without significant economic and political cost (Stern, 2007).

Nuclear energy added an additional layer of strategic complexity. While reducing dependence on imported fossil fuels for electricity generation, it introduced new vulnerabilities related to fuel supply, technological control, and regulatory oversight. The nuclear fuel cycle, though less visible than oil or gas trade, remained embedded in geopolitical power structures dominated by a limited number of technologically advanced states (Stokes, 2014).

In both cases, infrastructure emerged as a central mediating variable between resources and power. Control over pipelines, terminals, and processing facilities often proved more strategically consequential than ownership of resource deposits themselves. This infrastructural dimension marked a significant departure from classical geopolitical assumptions centred on territorial possession.

As energy systems became increasingly globalised, the geopolitical significance of connectivity intensified. Energy flows linked distant regions through complex networks of production, transit, and consumption, creating patterns of interdependence that were both stabilising and conflict-prone. Transit states acquired strategic importance disproportionate to their resource endowment, while resource-rich states remained vulnerable to disruptions along supply routes (Bridge et al., 2013).

This networked configuration of power complicates deterministic interpretations rooted solely in geography. Energy-resource determinism does not imply that access to resources mechanically determines political outcomes. Rather, it highlights how energy systems structure the strategic environment by constraining available options, shaping long-term incentives, and generating asymmetric dependencies. In this sense, determinism operates at the structural level, conditioning behaviour without eliminating political agency (Strange, 1988).

2.7. Toward an Explicit Energy-Resource Determinist Perspective

By the late twentieth and early twenty-first centuries, the cumulative effects of industrialisation, technological change, and global energy integration had rendered energy-resource considerations central to geopolitical analysis. Energy security emerged as a distinct strategic concern, while scholars increasingly examined how resource dependency, infrastructure vulnerability, and supply disruption shape international behaviour (Cherp & Jewell, 2014).

This intellectual evolution marks the transition from implicit, geographically framed determinism to

a more explicit energy-resource determinist perspective. While classical geopolitics embedded material logic within spatial concepts, contemporary approaches increasingly foreground energy and resources as structuring variables in their own right. Geography remains relevant, but its strategic meaning is now largely defined by the energy systems it hosts and the resource flows it enables.

Understanding this transition is essential for analysing contemporary geostrategic dynamics and provides the conceptual foundation for examining how energy-resource determinism operates in current international relations. It is this analytical perspective that informs the discussion in the following section, which turns to the role of energy-resource determinism in contemporary geostrategy.

3. Results: Energy-Resource Determinism in Contemporary Geostrategy

In the contemporary international system, energy and critical resources have become central structuring elements of geostrategic behaviour. Unlike earlier periods, when resources were often subsumed under broader considerations of territory or economic capacity, energy today constitutes a distinct strategic domain. Access to, control over, and vulnerability within energy systems shape state behaviour in ways that are increasingly explicit, measurable, and politically salient.

Energy-resource determinism in contemporary geostrategy does not imply that political outcomes are preordained by material conditions. Rather, it highlights how energy systems structure the strategic environment by creating asymmetric dependencies, constraining policy choices, and generating leverage that can be translated into political influence. In this sense, energy operates as a form of structural power that conditions behaviour over time (Strange, 1988).

3.1. Energy Security as a Geostrategic Imperative

Energy security has emerged as a core component of national security strategies across both energy-importing and energy-exporting states. While definitions vary, energy security is commonly understood as the availability of sufficient energy supplies at affordable prices and with acceptable levels of risk (Yergin, 2006). From a geostrategic perspective, however, energy security extends beyond economic considerations to encompass questions of sovereignty, autonomy, and strategic vulnerability.

For energy-importing states, dependence on external suppliers introduces risks associated with supply disruption, price volatility, and political pressure. These risks shape long-term strategic behaviour, including diversification of suppliers, investment in alternative routes, and the pursuit of strategic reserves. For energy-exporting states, control over supply volumes, pricing mechanisms, and infrastructure can generate significant geopolitical leverage, allowing energy to be used as a tool of influence in international relations (Klare, 2008).

The centrality of energy security reflects a broader shift in strategic thinking. Energy is no longer treated merely as an economic input but as a strategic variable that shapes the balance of power and conditions the exercise of state sovereignty.

3.2. Asymmetric Dependence and Structural Leverage

One of the defining features of energy-resource determinism in contemporary geostrategy is asymmetric dependence. While interdependence characterises most energy relationships, asymmetry arises when one actor possesses a disproportionate capacity to influence the terms of access, pricing, or continuity of supply. Such asymmetries create structural leverage that can be exploited for political or strategic purposes (Keohane & Nye, 1977). As shown in Figure 1, structural asymmetries in resource distribution underpin persistent patterns of dependency and influence, reinforcing the role of energy and resources in shaping geostrategic interactions.

Asymmetric dependence is particularly pronounced in energy systems due to their infrastructural rigidity. Pipelines, LNG terminals, refineries, and electricity grids require long-term investment and are not easily reconfigured. This rigidity limits short-term flexibility and increases exposure to external control, especially for states that rely heavily on a narrow set of suppliers or transit routes (Stern, 2007).

These structural relationships can be further conceptualised as a system of differentiated power positions within energy networks. As illustrated in Figure 2, energy exporters, transit actors, and import-dependent states occupy distinct but interrelated roles, each associated with specific forms of control, mediation, and vulnerability. Rather than forming a linear chain, these relationships constitute a triangular structure in which power is distributed unevenly and exercised through multiple channels, including supply control, access regulation, and dependency-based leverage.

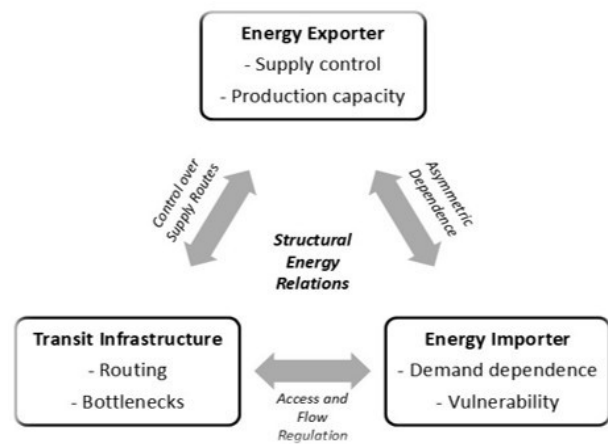


Fig. 2. . Structure of energy power and asymmetric dependence

Source: Author's elaboration.

The figure presents a triangular model of energy relations, illustrating how power is unevenly distributed among exporters, transit actors, and import-dependent states. It highlights distinct forms of leverage, mediation, and vulnerability that emerge from asymmetric energy systems.

From a geostrategic perspective, the significance of asymmetric dependence lies not in the constant exercise of coercion, but in the latent potential for influence. Even when energy is not actively weaponised, the awareness of vulnerability shapes diplomatic behaviour, alliance preferences, and strategic planning. In this sense, energy-resource determinism operates through anticipation and constraint rather than through direct compulsion.

3.3. Infrastructure, Chokepoints, and Strategic Vulnerability

Energy-resource determinism in contemporary geopolitics is inseparable from the role of infrastructure. Energy flows are mediated by physical networks that translate resource endowment into usable power. Control over these networks—pipelines, maritime routes, ports, and storage facilities—often proves more strategically consequential than control over resource deposits themselves (Bridge et al., 2013).

Maritime chokepoints, such as the Strait of Hormuz, the Bab el-Mandeb, and the Strait of Malacca, exemplify the intersection of energy flows and geostrategic vulnerability. Disruptions in these locations can have immediate global repercussions, amplifying their strategic significance far beyond their geographic size. Similarly, land-based infrastructure creates nodes of vulnerability in which political instability, conflict, or deliberate sabotage can disrupt energy supplies.

The strategic importance of infrastructure reinforces the shift from territorially bounded geopolitics to a network-oriented understanding of power. Energy-resource determinism thus operates through control of connectivity, highlighting how modern geostrategy is shaped by flows rather than by fixed spatial possession.

3.4. Energy, Coercion, and Strategic Signalling

The use of energy as an instrument of coercion has become an increasingly visible feature of contemporary geostrategy. While overt energy cut-offs or embargoes remain relatively rare due to their economic costs, more subtle forms of energy-based influence—such as pricing strategies, contractual conditions, and selective supply adjustments—are widely documented (Goldthau & Sitter, 2015).

Energy coercion is most effective when embedded within broader structural dependencies. The ability to signal potential disruption, even without immediate action, can influence the behaviour of dependent states. This dynamic underscores the deterministic dimension of energy geopolitics: strategic choices are shaped not only by actual events, but by the structural constraints and risks inherent in existing energy relationships (Klare, 2001).

Importantly, energy-resource determinism does not imply that energy exporters always act cohesively or rationally. Domestic constraints, market considerations, and technological change mediate the translation of energy resources into political power. Nevertheless, the structural asymmetries embedded in energy systems create enduring conditions for strategic influence.

3.5. Energy Transition and the Reconfiguration of Determinism

The ongoing global energy transition introduces new dimensions to energy-resource determinism rather than eliminating it. While the shift toward renewable energy is often framed as a pathway toward reduced geopolitical conflict, emerging technologies rely on critical minerals and complex supply chains that are themselves unevenly distributed (IEA, 2021; Sovacool et al., 2020).

Lithium, cobalt, rare earth elements, and other critical materials are concentrated in a limited number of regions, creating new patterns of dependency and competition. As with fossil fuels, control over extraction, processing, and technological standards may generate strategic leverage. The energy transition thus represents a transformation

rather than a disappearance of energy-resource determinism, reshaping its material basis and geopolitical expression.

Contemporary geostrategy increasingly reflects the logic of energy-resource determinism. Energy systems structure strategic behaviour by shaping dependencies, vulnerabilities, and opportunities for influence. While political agency and institutional frameworks remain important, they operate within material constraints that are difficult to transcend in the short to medium term.

This perspective provides a coherent analytical framework for understanding contemporary geopolitical dynamics and prepares the ground for more systematic theoretical engagement with energy-centred geopolitics. This framework provides a basis for further empirical and theoretical research on the spatial dimensions of energy systems in geopolitics. The concluding section of this article will summarise the analytical contributions of the energy-resource determinist approach and reflect on its value for academic instruction and future research.

4. Discussion

The analysis presented in this article underscores the growing relevance of energy and resource factors as structuring elements in contemporary geopolitics. By tracing the evolution from classical geopolitical thought to more explicit energy-resource perspectives, the study demonstrates that material constraints have consistently shaped strategic behaviour, even when not explicitly theorised. What has changed is not the existence of such constraints, but their analytical visibility and conceptual articulation within modern geopolitical and geostrategic frameworks.

A key implication of this analysis is that energy-resource determinism should be understood as a complementary rather than competing approach to existing theories in international relations. Rather than replacing realism, liberalism, or political geography, it enriches them by foregrounding the material conditions that underlie strategic interaction. In this sense, the framework aligns particularly well with structural approaches that emphasise constraints, distributions of capabilities, and long-term systemic pressures (Waltz, 1979; Strange, 1988).

At the same time, the concept raises important methodological and theoretical questions. One such question concerns the level of analysis at which energy-resource determinism operates most effectively. While the framework is primarily

structural, its effects are mediated by domestic political systems, institutional arrangements, and technological capabilities. This suggests that future research should explore how material constraints interact with agency across different levels of analysis, from global systems to regional dynamics and state-level decision-making.

Another important dimension concerns the role of infrastructure as a mediating variable. As highlighted throughout the article, contemporary energy systems are organised through complex networks rather than simple territorial configurations. This shift has significant implications for how power is conceptualised in geopolitics. Control over flows, bottlenecks, and connectivity may in many cases be more decisive than control over territory or resource deposits alone. This observation reinforces the need for closer integration between geopolitical analysis and political geography, particularly in relation to networked and infrastructural forms of power.

The framework also contributes to ongoing debates on interdependence and asymmetry. While classical theories of interdependence emphasise mutual vulnerability, the analysis presented here suggests that asymmetries within energy systems can generate uneven distributions of risk and influence. This has important implications for understanding contemporary geopolitical tensions, where dependence is rarely symmetrical and often embedded in long-term infrastructural and contractual arrangements.

Furthermore, the discussion of energy transition highlights the dynamic character of energy-resource determinism. The shift toward renewable energy and critical materials does not eliminate structural constraints but reconfigures them. New dependencies emerge around supply chains, processing capacities, and technological standards, suggesting that the locus of geopolitical competition is shifting rather than disappearing. This reinforces the argument that material conditions remain central to geopolitical analysis, even as their specific forms evolve.

Finally, the analytical framework developed in this article points to several avenues for future research. These include empirical studies of specific energy relationships, comparative analyses of regional dependency patterns, and more formal theoretical work aimed at integrating energy-resource determinism into broader models of international relations. By identifying the structural role of energy and resources, the framework provides a foundation for such work while remaining sufficiently flexible to accommodate diverse empirical contexts and methodological approaches.

5. Conclusion

This article has examined the role of energy and natural resources as structuring factors in geopolitics by tracing the evolution from classical geographical determinism to contemporary energy-resource determinist perspectives. By revisiting foundational geopolitical theories and situating them within broader material transformations, the analysis has demonstrated that the relationship between space and power has always been mediated—implicitly or explicitly—by access to and control over critical resources. What distinguishes the contemporary period is not the emergence of material constraints as such, but their increasing visibility, complexity, and strategic centrality.

The concept of energy-resource determinism, as employed in this article, has been presented not as a rigid or mechanistic explanation of international behaviour, but as a structural and probabilistic analytical lens. It highlights how the distribution of resources, the configuration of infrastructure, and the dynamics of energy systems shape the range of strategic options available to states. In this sense, geopolitics is not determined by energy in a simplistic causal manner; rather, energy systems define the conditions under which geopolitical strategies are formulated and pursued.

A key contribution of the analysis lies in emphasising the importance of infrastructure and connectivity in mediating the relationship between resources and power. Contemporary geopolitics is increasingly organised around networks of extraction, transportation, and distribution, which create new forms of dependency, asymmetry, and vulnerability. These networked configurations challenge traditional territorially centred models of geopolitics, suggesting that control over flows may be as significant as control over space.

At the same time, the article has underscored that energy-resource determinism must be understood within a broader context of political, technological, and institutional mediation. Material conditions constrain and shape behaviour, but they do not eliminate agency. Strategic choices remain contingent, negotiated, and subject to change, particularly in a period marked by rapid technological innovation and ongoing energy transition.

The contemporary transformation of global energy systems further reinforces the relevance of a resource-centred analytical perspective. The shift toward renewable energy and critical materials does not signal the disappearance of geopolitical competition, but rather its reconfiguration. Emerging

dependencies related to critical minerals, technological supply chains, and infrastructure systems suggest that material constraints will continue to play a central role in shaping international relations.

Finally, the framework outlined in this article provides a basis for further research across both geopolitics and political geography. It may be applied to a range of contemporary issues, including energy

conflicts, infrastructure competition, regional dependencies, and the geopolitics of the energy transition. By foregrounding the structural role of energy and resources, this approach contributes to a more nuanced understanding of how material conditions shape global power relations in the twenty-first century, while leaving open the possibility for more systematic theoretical development in future work.

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