“Weaponization of energy: A geopolitical analysis of the 2022 energy crisis and the redesign of the European order”

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WEAPONIZATION OF ENERGY: A GEOPOLITICAL ANALYSIS OF THE 2022 ENERGY CRISIS AND THE REDESIGN OF THE EUROPEAN ORDER

Abstract

Russia's full-scale invasion of Ukraine in February 2022 transformed the European Union's energy dependence from a latent structural vulnerability into a major geopolitical crisis, highlighting the use of energy as an instrument of strategic coercion. This paper analyzes the 2022 energy crisis as a defining moment for the EU's security, foreign policy, and strategic autonomy. It examines how the 'weaponization' of energy catalyzed the European institutional response, reconfigured external energy relations, and integrated the energy transition into the core security agenda. Employing a qualitative, documentary-analytical methodology based on a comparative analysis of strategic discourse and political priorities before and after 2022, the study identifies a fundamental paradigm shift. Results demonstrate a structural realignment from a predominantly market-based, ecological framework (centered on the European Green Deal) to a securitized strategy where decarbonization is inextricably linked to energy security and strategic autonomy. Quantitatively, this shift facilitated a rapid operational decoupling: the share of Russian gas in EU consumption plummeted from approximately 40% in 2021 to under 10% by 2023, driven by a surge in LNG imports and accelerated renewable deployment. Qualitatively, it justified unprecedented institutional interventions, from emergency price caps and joint purchasing mechanisms to binding phase-out targets for Russian fuels and reframed the green transition as a central pillar of geopolitical resilience.

Keywords energy crisis, energy security, decarbonization, strategic autonomy, REPowerEU

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INTRODUCTION

Russia's full-scale invasion of Ukraine in February 2022 acted as a geopolitical earthquake, transforming the European Union's long-standing energy dependence from a latent structural vulnerability into an acute strategic crisis. This event violently exposed the core of a dangerous asymmetry: the European Union's deep dependence on Russian energy resources, particularly piped natural gas, was brutally exposed not as a mere market variable but as an instrument of strategic coercion. The Kremlin, returning to a historically established tactic, shifted to a policy of "weaponization of energy," gradually reducing and then cutting off an overwhelming portion of gas flows to Europe in an attempt to weaken Western cohesion and support for Ukraine (Gross & Stelzenmüller, 2024). This moment represented not only a supply crisis but a fundamental break with the premise of a strategic partnership based on mutual interdependence, forcing a radical reconceptualization of the continent's security, sovereignty, and power strategy (Goldthau

& Youngs, 2023). This 'weaponization' of energy shook the continent, causing a deep crisis that jeopardized supply security, amplified inflation, and tested the political cohesion of the European Union (European Council, 2022).

Europe's response unfolded on two interconnected levels, marking the transition from immediate crisis management to long-term strategic reordering. The consequences of this fracture were immediately apparent: energy prices reached historic highs, threatening industrial competitiveness and triggering a cost-of-living crisis. The European response was swift and unprecedented in political terms. Under the REPowerEU plan, the European Commission (2022) coordinated voluntary reductions in gas demand, diversified supply sources through LNG imports, and massively accelerated renewable energy and hydrogen targets. These actions were not just crisis measures but represented a profound strategic reorientation. European energy policy, traditionally focused on the triumvirate of security of supply, competitiveness, and sustainability, has been explicitly refocused on the concepts of energy sovereignty and the strategic reduction of dependencies (Herranz-Surralles, 2024; Hafner & Tagliapietra, 2020). The crisis has catalyzed the securitization of the energy agenda, redefining decarbonization not only as an economic or environmental goal but as an indispensable pillar of geopolitical resilience.

1. LITERATURE REVIEW

Scholarly analysis of the post-2022 energy crisis can be categorized into two dominant, yet often siloed, strands: one focused on geopolitical causation and security, and the other on internal policy and market adaptation.

The first strand, rooted in international relations and security studies, explicitly analyses the conflict through the lens of energy weaponization. It establishes that Russia's supply cuts constituted a strategic tool of coercion, fundamentally shifting energy from a commodity to an instrument of statecraft (Bordoff & O'Sullivan, 2022). Subsequent assessments, such as that by Gross and Stelzenmüller (2024), evaluate the strategic outcome, arguing that Europe's 'energy divorce' remains incomplete due to persistent residual dependencies and the re-routing of flows through third countries. Previous studies skillfully diagnose the external shock and the vulnerability it exposed, but tend to treat the EU's subsequent paradigm shift as an inevitable or automatic response to an external threat (Goldthau & Youngs, 2023; Gross & Stelzenmüller, 2024). Consequently, the complex internal process of redefining strategic doctrine, a process requiring political contestation, discursive reformulation, and institutional innovation, remains insufficiently explored in this analysis, which focuses primarily on external aspects.

Concurrently, a second strand employs the methodologies of economics, public policy, and governance to scrutinize the EU's internal response. Quantitative studies provided crucial data on the severe macroeconomic impacts on inflation, growth, and trade (Ruta, 2022; IMF, 2022). Institutional reports and technical assessments then catalogued the unprecedented scale and nature of the policy interventions, ranging from emergency market-correction mechanisms to the systemic RePowerEU plan (European Council, 2022a; IEA, 2023). However, recent studies highlight major frictions in the implementation of the EU's internal response. For instance, Siddi and Prandin (2023) show that the EU's rapid and centralized intervention came into direct conflict with the traditional structure of energy governance, based on the sovereignty of Member States, exposing the institutional limits and political fragmentation of the Commission's 'geopolitical shift.' Relevant studies in the field of governance and energy markets, such as those by the European Union Agency for the Cooperation of Energy Regulators (ACER, 2023) and the European Central Bank (ECB, 2023), reveal the coordination mechanisms and economic costs of EU action. However, they focus mainly on the decision-making architecture and macro-financial impact, leaving in the shadows the discursive process through which consensus was built and the radical break with the previous market logic was legitimized.

The point of convergence and revealing divergence for these two strands is the analysis of the energy transition. The geopolitical-security approach re-

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frames it as a core domain of strategic competition. Goldthau and Youngs (2023) conceptualize this as a "new geopolitics of the climate transition," where renewables and critical minerals become assets of autonomy and security. In contrast, the policy-economic approach analyses it predominantly through the prisms of investment, risk, and market design. Empirical studies confirm that the crisis acted as a powerful accelerator for investments in efficiency and green technologies (Gajdzik et al., 2024; Tesfu, 2024), while concurrent quantitative research warns that this accelerated transition remains highly exposed to geopolitical volatility, supply chain bottlenecks, and technological constraints (Ha, 2024; Khan et al., 2023). The most recent syntheses (2024–2025) indicate a partial market normalization but confirm the permanence of the new paradigm, highlighting the fragmentation of global energy governance, the emergence of new dependencies, and the securitization of supply chains (Jeroudi, 2024; Hrubliak et al., 2025; Raya-Tapia et al., 2025).

Thus, a critical gap persists. While the literature proficiently maps the causes (weaponization), tools (policy responses), and new domains (securitized transition) of the crisis, it does not systematically analyze the discursive process through which these elements coalesced into a new, coherent strategic paradigm for the EU. Studies on weaponization and policy focus on actions and structures, leaving in the shadows how the crisis was narratively framed to legitimize a fundamental doctrinal reorientation. This study addresses this gap by examining the shift in official EU rhetoric as the primary evidence for this transformation.

2. METHODOLOGY

This paper adopts a qualitative analytical approach, focusing on the documentary analysis of European institutional strategic discourse. To capture this transformation, the study analyzes a selected corpus of official European Union documents published between 2020 and 2025. The corpus includes types of texts that are fundamental to strategic discourse: communications and policy plans (e.g., key documents of the European Green Deal and the REPowerEU Plan), European Council conclusions on energy security, and official public statements by the Commission Presidency. These are analyzed comparatively across two distinct periods: the pre-crisis paradigm (until February 2022) and the post-crisis paradigm (from March 2022 onwards). To triangulate and contextualize the EU's self-reported perspective, the analysis systematically integrates technical and market assessments from relevant IEA annual reports.

From an analytical point of view, the process follows a two-stage complementary logic. First, a deductive thematic analysis is applied. This begins with a predefined coding scheme, derived from the research objectives, which identifies key concepts such as "weaponization," "sovereignty," "strategic autonomy," and "securing the transition." In the second stage, a comparative analysis of the discourse between the two defined periods is carried out. This analysis is not limited to the presence of themes but also investigates changes in meaning, the narrative reframing of issues (e.g., the shift from "ecological transition" to "strategic transition"), and the construction of new causal reasoning linking the external threat to the internal imperative for reform.

This approach has recognized limitations. It focuses primarily on the formulation of doctrines and cannot directly assess their implementation or political effectiveness. Furthermore, the perspective is deliberately EU-wide, which leaves out the detailed analysis of variations and discursive resistances at the national level.

3. RESULTS AND DISCUSSION

3.1. The dual response: Crisis management and strategic repositioning

A comparative analysis of official documents and market data reveals that the European Union's response to the 2022 crisis was characterized by a two-pronged strategic approach, which simultaneously addressed the urgency of supply and the profound change in the long-term policy framework. On the one hand, the EU successfully managed the immediate shock through an unprecedented mobilization of public policy instruments. The REPowerEU plan, launched in May 2022, acted as a strategic catalyst, transforming the vague goal of

diversification into an aggressive operational program to replace Russian fossil fuel imports.

The result was a seismic reduction in dependence: in just two years, the share of Russian gas in EU gas consumption fell from around 40% in 2021 to below 10% by 2023, through a combination of a massive increase in LNG imports (by over 60%), accelerated implementation of renewable projects, and energy efficiency efforts (IEA, 2023).

On the other hand, this technical effort was accompanied by rapid legislative consolidation. Unlike the fragmented responses of the past, the Commission and the Council negotiated and adopted regulations institutionalizing decoupling, such as the joint gas procurement mechanism and, more significantly, the political agreement to phase out Russian gas imports by 2027 (Council of the European Union, 2025). This marks a shift from emergency measures to a new strategic status quo, in which independence from Russia has become a constitutive principle of EU energy policy.

Beyond the impressive decoupling figures, the most profound transformation, highlighted by the analysis of official discourse, was the complete securitization of the energy agenda. Before 2022, energy was primarily a domain of economic and environmental policy. After the invasion, it was repositioned as a central domain of national and European security. Table 1 summarizes this paradigm shift through a comparative thematic analysis of key documents. There is a clear shift in vocabulary from terms such as "integrated markets," "competitive prices," and "climate neutrality" to terms such as "strategic autonomy," "resilience," "vulnerability," and "security of supply." More importantly, the proposed policy instruments reflect this new logic: from long-term market mechanisms to emergency intervention and mandatory solidarity instruments.

This transformation is not merely rhetorical. It has had direct operational consequences. For example, the acceleration of renewable project approvals was justified not only by climate objectives but also by the urgent need to replace Russian gas, and investments in LNG infrastructure were promoted as projects of strategic European interest, receiving accelerated

Table 1. Paradigm shift in EU energy policy (2022–2024): A comparative discursive-instrumental analysis

Source: Our analysis, based on the cited official EU documents and the observed shift in strategic discourse during 2022–2024.

Dimension Analyzed	Pre-2022 Paradigm *(The Green Market)*	Post-2022 Paradigm *(Strategic Security)*	Policy Instruments & Key Post-2022 Documents *(Official Sources)*
General Strategic Framework	Energy is an economic good within the internal market, aligned with climate policies (***Green Deal***). Risk management focused on prices and long-term supply security.	Energy is a strategic asset and domain of national security. Energy security becomes synonymous with strategic autonomy and geopolitical resilience.	REPowerEU Plan (COM/2022/230 final) (EC, 2022a), European Commission Communication: "Securing the EU's energy supply in 2023 and beyond" (COM/2023/138 final) (European Union, 2023a)
Relationship with External Suppliers	Economic interdependence and diversification. The relationship with Russia was a "strategic partnership." Objective: Stability and affordable prices.	Geoeconomic de-risking and strategic decoupling. Diversification is a security imperative. Objective: Reduce vulnerability to a single hostile supplier.	Council conclusions on EU external energy engagement in response to the energy crisis (JOIN(2022) 23 final, 18 June 2022) (EC, 2022b). Surge in LNG imports from the US (IEA, 2024). Goldthau (2013)
Role of the Green Transition	Long-term climate transition (2050). Primary driver: Ecological objectives and economic opportunities for technological leadership.	Instrument of security in the short and medium term. Acceleration has the explicit purpose of replacing fossil fuel imports and building industrial autonomy.	Green Deal Industrial Plan (COM/2023/62 final) (EC, 2023) Directive (EU) 2023/2413 (RED III): raises the binding target for renewable energy to 45% by 2030 (European Union, 2023b)
Implemented Policy Instruments	Long-term market regulations: Emissions Trading System (ETS), interconnection regulations, National Energy and Climate Plans (NECPs).	Emergency intervention and solidarity legislation: • Reg. (EU) 2022/2578: The market "price cap" for gas • Reg. (EU) 2022/2576: Joint gas purchasing, demand reduction and solidarity • Reg. (EU) 2022/1032: Mandatory gas storage (90% by November).	Reg. (EU) 2022/2578 (European Union, 2022b) Reg. (EU) 2022/2576 (European Union, 2022a) Reg. (EU) 2022/1032 (European Union, 2022c)

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approval procedures. Energy security has thus become the central organizing principle around which environmental, industrial, and trade policies have been aligned.

3.2. The contours and contradictions of strategic autonomy

The results of the analysis confirm that the crisis represented a "federal moment" for the EU, accelerating integration in the field of energy and validating predictions about a new energy geopolitics (Bordoff & O'Sullivan, 2022). An acute geopolitical shock catalyzed institutional transformation, converting a long-standing structural vulnerability into an impetus for political integration and collective action. The EU rapidly mobilized the instruments of the internal market and common foreign policy to achieve a clear strategic objective, thus supporting the idea that crises can drive the European project forward.

A critical discussion must take into account that the strategic autonomy gained is still limited and accompanied by challenges. First, the success of decoupling has largely been based on the ability to replace one geopolitical dependency (Russian pipeline gas) with a market dependency (LNG on the global spot market) and new geopolitical dependencies (gas from the US, Norway, Azerbaijan). This reduces exposure to a single hostile actor, but maintains vulnerability to global market volatility and the decisions of other powers. In this sense, our analysis corroborates Gross and Stelzenmüller's (2024) warnings about a "messy divorce" with Russia, which transfers risks but does not eliminate them.

Secondly, and more significantly, accelerating the green transition as a security tool creates a new paradox. If, according to the new paradigm, renewable energy is the foundation of sovereignty, then the current dependence on global supply chains for solar panels, wind turbines, batteries, and critical metals (dominated by China) becomes a strategic vulnerability of the highest order (IEA, 2023). Therefore, strategic autonomy in the field of energy is shifting from the issue of fuel supply to the issue of access to technology and raw materials. This exacerbates the dilemma identified by Siddi and Prandin (2023) between the Commission's geopolitical shift and the constraints of a globalized economic model.

The EU's response to the 2022 crisis was remarkable in terms of speed and coordination, successfully securing the energy agenda and demonstrating an unexpected capacity for collective action. However, the new paradigm has not resolved the fundamental contradiction of the European project in the contemporary world: strategic autonomy is sought in a context of deep global economic interdependence. Future resilience will depend not only on maintaining unity against Russia but also on the EU's ability to navigate this new landscape of complex, interconnected vulnerabilities, from the LNG market to rare-metal value chains, transforming strategic autonomy from a crisis slogan into a coherent long-term industrial, innovation, and trade policy.

CONCLUSION

The aim was to identify and analyze the paradigm shift in the European Union's energy policy triggered by the 2022 crisis, by examining the transformation of official strategic discourse and its consequences for the political agenda.

The results show that this process involved a fundamental reorientation, both narrative and operational. The analysis of official discourse highlights a definitive shift from a market-based framework and long-term climate goals to one in which energy security and strategic autonomy become constitutive principles. This securitization of discourse has enabled and legitimized unprecedented political interventions, such as emergency mechanisms and the acceleration of the green transition as an instrument of geopolitical resilience.

This analysis shows that the new paradigm of "strategic autonomy" is essentially a reconfiguration of dependence. Decoupling from Russia has changed the geography of risk, replacing a concentrated geo-

political threat with more diffuse systemic vulnerabilities: a structural dependence on volatile global markets and, more critically, a strategic exposure to value chains for technologies and raw materials critical to the green transition. Therefore, the sustainability of the EU's strategic position will not depend on maintaining defensive unity, but on its ability to transform this declarative autonomy into an integrated long-term policy, one that coherently articulates energy security with industrial policy, technological innovation, and proactive economic diplomacy, thus transforming the crisis imperative into a sustainable basis for geo-economic sovereignty.

AUTHOR CONTRIBUTIONS

Conceptualization: Cristina Gabriela Cosmulese.
Data curation: Cristina Gabriela Cosmulese.
Formal analysis: Cristina Gabriela Cosmulese.
Investigation: Cristina Gabriela Cosmulese.
Methodology: Cristina Gabriela Cosmulese.
Project administration: Cristina Gabriela Cosmulese.
Supervision: Cristina Gabriela Cosmulese.
Validation: Cristina Gabriela Cosmulese.
Visualization: Cristina Gabriela Cosmulese.
Writing – original draft: Cristina Gabriela Cosmulese.
Writing – review & editing: Cristina Gabriela Cosmulese.

REFERENCES

1. Bordoff, J., & O'Sullivan, M. L. (2022). Green upheaval: The new geopolitics of energy. *Foreign Affairs, 101*. Retrieved from https://www.foreignaffairs.com/articles/world/2021-11-30/geopolitics-energy-green-upheaval
2. Council of the European Union. (2025, December 3). *Council and Parliament reach agreement on rules to phase out gas imports from Russia* (Press Release). Retrieved from https://www.consilium.europa.eu/en/press/press-releases/2025/12/03/council-and-parliament-strike-a-deal-on-rules-to-phase-out-russian-gas-imports-for-an-energy-secure-and-independent-europe/
3. European Central Bank (ECB). (2023). Update on economic, financial and monetary developments. *Economic Bulletin,* (5). Retrieved from https://www.ecb.europa.eu/press/economic-bulletin/html/eb202305.en.html
4. European Commission (EC). (2022a). *Communication from the commission to the European parliament, the European council, the council, the European economic and social committee and the committee of the regions* (REPowerEU Plan) (COM/2022/230 final). Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2022:230:FIN
5. European Commission (EC). (2022b). *Joint communication to the European parliament, the council, the European economic and social committee and the committee of the regions* (JOIN(2022) 23 final). Brussels. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52022JC0023
6. European Commission (EC). (2023). *Communication from the commission to the European parliament, the European council, the council, the European economic and social committee and the committee of the regions* (COM(2023) 62 final). Brussels. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023DC0062
7. European Council. (2022). *Impact of Russia's invasion of Ukraine on the markets: EU response.* Retrieved from https://www.consilium.europa.eu/en/policies/eu-response-russia-military-aggression-against-ukraine-archive/impact-of-russia-s-invasion-of-ukraine-on-the-markets-eu-response/
8. European Union Agency for the Cooperation of Energy Regulators (ACER). (2023). *Gas & Electricity Markets. Monitoring Report 2022.* Retrieved from https://www.acer.europa.eu/monitoring/MMR
9. European Union. (2022a). *Council Regulation (EU) 2022/2576 of 19 December 2022 enhancing solidarity through better coordination of gas purchases, reliable price benchmarks and exchanges of gas across borders* (ST/14065/2022/INIT). Retrieved from https://eur-lex.europa.eu/eli/reg/2022/2576/oj/eng
10. European Union. (2022b). *Council regulation (EU) 2022/2578. Establishing a market correction mechanism to protect Union citizens and the economy against excessively high prices* (ST/15202/2022/INIT). Retrieved from https://eur-lex.europa.eu/eli/reg/2022/2578/oj/eng

https://doi.org/10.21511/gg.07(1).2026.01

11. European Union. (2022c). *Regulation (EU) 2022/1032 of the European Parliament and of the Council of 29 June 2022 amending Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage* (PE/24/2022/INIT). Retrieved from https://eur-lex.europa.eu/eli/reg/2022/1032/oj

12. European Union. (2023a). *Commission Implementing Regulation (EU) 2023/138 of 21 December 2022 establishing a list of specific high-value datasets and the modalities for their publication and reuse* (C/2022/9562). Retrieved from https://eur-lex.europa.eu/eli/reg_impl/2023/138/oj

13. European Union. (2023b). *Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652* (PE/36/2023/REV/2). Retrieved from https://eur-lex.europa.eu/eli/dir/2023/2413/oj/eng

14. Gajdzik, B., Wolniak, R., Nagaj, R., Žuromskaitė-Nagaj, B., & Grebski, W. W. (2024). The influence of the global energy crisis on energy efficiency: A comprehensive analysis. *Energies, 17*(4), Article 947. https://doi.org/10.3390/en17040947

15. Goldthau, A. (2013). *The geopolitics of natural gas. The politics of natural gas development in the European Union*. Harvard University's Belfer Center and Rice University's Baker Institute Center for Energy Studies. Retrieved from https://www.belfercenter.org/sites/default/files/pantheon_files/files/publication/MO-CES-pub-GeoGasEU-102513.pdf

16. Goldthau, A., & Youngs, R. (2023). The EU energy crisis and a new geopolitics of climate transition. *Journal of Common Market Studies, 61*(S1), 115-124. https://doi.org/10.1111/jcms.13539

17. Gross, S., & Stelzenmüller, C. (2024, June 18). *Europe's Messy Russian gas divorce: More than two years after Putin's invasion of Ukraine, reliance on Russia for energy lingers*. Brookings Institution. Retrieved from https://www.brookings.edu/articles/europes-messy-russian-gas-divorce

18. Ha, L. T. (2024). A wavelet analysis of dynamic connectedness between geopolitical risk and renewable energy volatility during the COVID-19 pandemic and Ukraine-Russia conflicts. *Environmental Science and Pollution Research, 31*(12), 17994-18009. https://doi.org/10.1007/s11356-023-26033-1

19. Hafner, M., & Tagliapietra, S. (2020). *The geopolitics of the global energy transition*. Cham, Switzerland: Springer Nature. https://doi.org/10.1007/978-3-030-39066-2

20. Herranz-Surralles, A. (2024). The EU energy transition in a geopoliticizing world. *Geopolitics, 29*(5), 1882-1912. https://doi.org/10.1080/14650045.2023.2283489

21. Hrubliak, O., Zhavoronok, A., Popelo, O., Kharabara, V., Dubyna, M., & Lopashchuk, I. (2025). The impact of financial globalization on the economic growth of countries: A case for Ukraine. *Investment Management and Financial Innovations, 22*(4), 209-226. https://doi.org/10.21511/imfi.22(4).2025.17

22. International Energy Agency (IEA). (2023). *Energy Technology Perspectives*. Retrieved from https://www.iea.org/reports/energy-technology-perspectives-2023

23. International Energy Agency (IEA). (2024). *Gas Market Report, Q1 2024*. Retrieved from https://www.iea.org/reports/gas-market-report-q1-2024

24. International Monetary Fund (IMF). (2022). *War Sets Back the Global Recovery. World Economic Outlook*. Retrieved from https://www.imf.org/en/publications/weo/issues/2022/04/19/world-economic-outlook-april-2022

25. Jeroudi, L. (2024, November 12). *Energy geopolitics in a fragmented world: A comparative analysis of Europe and the Middle East.* TRENDS Research & Advisory. Retrieved from https://trendsresearch.org/insight/energy-geopolitics-in-a-fragmented-world-a-comparative-analysis-of-europe-and-the-middle-east

26. Khan, K., Khurshid, A., & Cifuentes-Faura, J. (2023). Energy security analysis in a geopolitically volatile world: A causal study. *Resources Policy, 83,* Article 103673. https://doi.org/10.1016/j.resourpol.2023.103673

27. Raya-Tapia, A. Y., López-Flores, F. J., Ramírez-Márquez, C., & Ponce-Ortega, J. M. (2025). The energy-food nexus: Geopolitical and health crisis analysis. In *Machine Learning and Clustering for a Sustainable Future: Applications in Engineering and Environmental Science* (pp. 225-241). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-032-03876-0_7

28. Ruta, M. (Ed.). (2022). *The impact of the war in Ukraine on global trade and investment*. World Bank. Retrieved from http://hdl.handle.net/10986/37359

29. Siddi, M., & Prandin, F. (2023). Governing the EU's energy crisis: The European Commission's geopolitical turn and its pitfalls. *Politics and Governance, 11*(4), 286-296. https://doi.org/10.17645/pag.v11i4.7315

30. Tesfu, E. I. (2024). The EU's energy crisis: Shifting from fossil fuels to renewable solutions amid geopolitical tensions. *International Journal of Advanced Multidisciplinary Research and Studies, 4*(6), 608-613. https://doi.org/10.62225/2583049X.2024.4.6.3482