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**DIMENSIONS OF INTERNATIONAL SECURITY:
A MULTIDIMENSIONAL APPROACH TO GLOBAL STABILITY**

**DIMENSIUNILE SECURITĂȚII INTERNAȚIONALE: O ABORDARE
MULTIDIMENSIONALĂ A STABILITĂȚII GLOBALE**

**АСПЕКТЫ МЕЖДУНАРОДНОЙ БЕЗОПАСНОСТИ: МНОГОГРАННЫЙ
ПОДХОД К ГЛОБАЛЬНОЙ СТАБИЛЬНОСТИ**

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ABSTRACT:

**DIMENSIONS OF INTERNATIONAL SECURITY:
A MULTIDIMENSIONAL APPROACH TO GLOBAL STABILITY**

This article explores the concept of international security, categorizing it into various dimensions such as military-political, economic, environmental, information (cyber), humanitarian, biological and sanitary-epidemiological, and energy security. Each type addresses distinct global challenges, from armed conflicts and economic crises to environmental degradation and cyber threats. By examining the mechanisms and threats within each area, the article emphasizes the need for international cooperation and multilateral efforts to ensure global stability, peace, and sustainable development. Furthermore, the article highlights the interconnectedness of these security dimensions and the complexity of addressing them in an increasingly globalized world. It calls for comprehensive strategies that integrate diverse sectors and promote resilience to emerging global risks, urging policymakers, organizations, and nations to collaborate in creating a more secure and stable international environment.

Keywords: international security, military-political security, economic security, cybersecurity, environmental security, humanitarian security, energy security, sustainable development.

JEL Classification: K33; F52

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REZUMAT:

**DIMENSIUNILE SECURITĂȚII INTERNAȚIONALE: O ABORDARE
MULTIDIMENSIONALĂ A STABILITĂȚII GLOBALE**

Articolul explorează conceptul de securitate internațională, clasificând-o în diverse dimensiuni, cum ar fi securitatea politico-militară, economică, ecologică, informațională (cibernetică), umanitară, biologică și sanitar-epidemiologică, precum și securitatea energetică. Fiecare dintre aceste tipuri de

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securitate abordează provocări globale distincte, de la conflicte armate și crize economice până la degradarea mediului și amenințări cibernetice.

Articolul analizează mecanismele și amenințările din fiecare domeniu și subliniază importanța cooperării internaționale și a eforturilor multilateralismului pentru asigurarea stabilității globale, păcii și dezvoltării durabile. Mai mult, articolul evidențiază interconectivitatea acestor dimensiuni ale securității și complexitatea abordării lor într-o lume din ce în ce mai globalizată. Se face apel la strategii cuprinzătoare care integrează sectoare diverse și promovează reziliența la riscurile emergente, încurajând colaborarea între guverne, organizații și state pentru a crea un mediu internațional mai sigur și mai stabil.

Cuvinte cheie: securitate internațională, securitate politico-militară, securitate economică, securitate cibernetică, securitate ecologică, securitate umanitară, securitate energetică, dezvoltare durabilă.

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РЕЗЮМЕ:

АСПЕКТЫ МЕЖДУНАРОДНОЙ БЕЗОПАСНОСТИ: МНОГОГРАННЫЙ ПОДХОД К ГЛОБАЛЬНОЙ СТАБИЛЬНОСТИ

Статья исследует концепцию международной безопасности, классифицируя её на различные виды, такие как военно-политическая, экономическая, экологическая, информационная (кибер) безопасность, гуманитарная, биологическая и санитарно-эпидемиологическая безопасность, а также энергетическая безопасность. Каждый из этих видов безопасности направлен на решение отдельных глобальных проблем, таких как вооружённые конфликты, экономические кризисы, деградация окружающей среды и киберугрозы.

В статье рассматриваются механизмы и угрозы в каждой из этих областей, подчёркивается важность международного сотрудничества и многогранных усилий для обеспечения глобальной стабильности, мира и устойчивого развития. Кроме того, статья акцентирует внимание на взаимосвязанности этих аспектов безопасности и сложности их решения в условиях глобализирующегося мира. Поднимается вопрос о необходимости комплексных стратегий, которые объединяют различные сектора и способствуют повышению устойчивости к новым глобальным рискам, призывая к сотрудничеству правительств, организаций и стран для создания более безопасной и стабильной международной среды.

Ключевые слова: международная безопасность, военно-политическая безопасность, экономическая безопасность, кибербезопасность, экологическая безопасность, гуманитарная безопасность, энергетическая безопасность, устойчивое развитие.

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Relevance of the Study and Introduction to the Issues of International Security

International Security Studies (ISS) is a sub-discipline within the field of International Relations that focuses on the study of organized violence, armed conflict, and national security. Its central theme is the phenomenon of war—specifically, the threat, use, and management of military force (Nye, Lynn-Jones, 1988). The discipline emerged prominently after World War II, particularly during the Cold War era, and was initially closely associated with state-centric perspectives, emphasizing military capabilities and strategic considerations. ISS primarily evolved in Western academic circles, gradually distinguishing

itself from purely military studies and historical analyses by adopting a broader conceptualization of security¹.

In the 21st century, the concept of international security has significantly expanded and transformed. While traditionally understood as security relations between sovereign states, contemporary threats no longer primarily originate from state actors. Instead, security threats now arise from various non-state sources, including hyper-nationalist ethnic groups, criminal networks, mafia-controlled governance structures, pandemics such as HIV/AIDS, terrorism, contaminated food supplies, poverty, economic mismanagement, overpopulation, failed states, refugee flows, and—most significantly—environmental issues, such as pollution, ecological degradation, biodiversity loss, and unsustainable resource management².

Today, the primary victims of these evolving threats are individuals (highlighting the importance of individual or human security), societies (social security), and the planet as a whole (global security). At stake is the physical safety and economic survival of individuals, the integrity and identity of societies, and, in the long term, the sustainability of our global environment and civilization. For the first time in history, there is widespread global recognition of the urgent need to address these interconnected threats to achieve planetary sustainability.

International security is a complex and multifaceted concept that encompasses various aspects aimed at maintaining peace, stability, and cooperation among nations. It involves the prevention of conflicts, the reduction of threats, and the protection of human rights, environmental sustainability, and economic stability. International security can be categorized into several types, each addressing distinct challenges and threats faced by the global community. These include military-political security, economic security, environmental security, information (cyber) security, humanitarian security, biological and sanitary-epidemiological security, and energy security.

Typology and Main Dimensions of International Security

Military-political security focuses on the protection of states from external military aggression and political coercion. It seeks to establish mechanisms to prevent the escalation of tensions between states and to mitigate the risk of armed conflicts. Key instruments for ensuring military-political security include non-aggression pacts, collective security arrangements such as the United Nations (UN) and the North Atlantic Treaty Organization (NATO), arms control agreements, and nuclear non-proliferation treaties. These mechanisms aim to promote dialogue, build trust, and create frameworks for conflict resolution. The main threats in this area include armed conflicts, interstate aggression, and the destabilizing effects of arms races.

Military security primarily relates to the state as its principal actor. Political science has made substantial progress in this field, whereas International Relations has studied and gathered knowledge on interactions among states. According to theories developed within these disciplines, military security fundamentally arises from the existence of the state itself and the international environment surrounding it. It is intrinsically linked to the presence of armed forces, representing core elements aligned with neorealist theories of international politics, which emphasize the survival and growth capabilities of states.

The sources of military threats should be analyzed considering the specifics of an international environment where military power serves as a central instrument in state policy. Military strength is unique in its ability to physically destroy elements of another state or apply effective forms of violence. Its mere existence represents a potent instrument

¹ Muhammad A., Riyanto S. International security studies: Origins, development and contending approaches //Brazilian Journal of Strategy & International Relations. – 2021. – T. 10. – №. 20. – C. 230-249. <https://seer.ufrgs.br/austral/article/download/117331/66033/0> (accessed on 01.04.2025)

² Heurlin, B., & Kristensen. (n.d.). International security. In International Relations – Vol. II. Encyclopedia of Life Support Systems (EOLSS). Danish Institute of International Affairs, Copenhagen, Denmark. <https://www.eolss.net/sample-chapters/c14/E1-35-04-02.pdf> (accessed on 02.04.2025)

of influence and inherently poses threats to the security of other nations. This threat is further intensified by states whose international relations are marked by dishonesty. Given the rapid advancements in military technology, the balance of power between states can shift swiftly, offering dishonest states opportunities to deceptively but effectively achieve dominance. States, recognizing this reality, proceed cautiously in forming alliances and signing arms control agreements, actively working to safeguard their security. The inherent threat military power poses is often neglected in academic discussions and some official international documents¹.

Today, there is a broad consensus that international law prohibits the use of force to resolve international disputes, with certain exceptions. Military force is legally permissible for collective security actions, self-defense, or when explicitly authorized by the United Nations Security Council. Thus, states legitimately maintain armed forces for defensive purposes.

Economic security is concerned with the stability of the international economic system and the protection of the economic interests of nations. Economic security is vital for the prosperity of states and the global economy. It involves safeguarding against economic crises, trade wars, and the adverse effects of sanctions. Key mechanisms to ensure economic security include international economic organizations such as the World Trade Organization (WTO), the International Monetary Fund (IMF), and the World Bank, as well as bilateral and multilateral trade agreements. Energy dependence and the potential for economic blockades are among the primary threats to economic security.

Economic security serves as a fundamental platform for protecting the national interests of each country and creates favorable conditions for implementing strategic plans aimed at future development. As an instrument for safeguarding national interests, economic security is regarded as a primary means of managing economic cycles.

Achieving strategic economic objectives and ensuring the resilience of national interests is impossible without developing an effective system capable of countering threats that influence economic development. Incorporating economic security into the list of priority areas for safeguarding national interests and updating its conceptual content contributes to a more comprehensive understanding and facilitates the development of measures aimed at mitigating various economic threats.

The use of economic security systems to maintain and protect national interests involves several key areas: introducing and improving theoretical and methodological frameworks, tools, and approaches for shaping economic security models; modernizing the structure of economic security systems in line with contemporary conditions; and developing mechanisms to safeguard national interests within government strategies, consistent with the selected economic security model².

Environmental security is another critical aspect of international security, focused on preventing ecological disasters and promoting the sustainable use of natural resources. This type of security is increasingly important in the face of climate change, biodiversity loss, and the depletion of vital resources. International environmental agreements, such as the Kyoto Protocol and the Paris Agreement, are essential tools in addressing global environmental challenges. Environmental security seeks to mitigate the impacts of global

¹ Szpyra, Ryszard. "Military Security within the Framework of Security Studies: Research Results." *Connections* 13, no. 3 (2014): 59–82. <http://www.jstor.org/stable/26326368> (accessed on 01.04.2025)

² Vitalii Kadala & Olena Guzenko & Olha Bondarenko, 2023. "Economic Security As A Tool For The Protection Of National Interests," *Baltic Journal of Economic Studies*, Publishing house "Baltija Publishing", vol. 9(4). DOI: 10.30525/2256-0742/2023-9-4-111-118 <https://ideas.repec.org/a/bal/journal/2256-074220239415.html#:~:text=Economic%20security%20is%20a%20priority,economic%20cycles%20of%20their%20development> (accessed on 07.04.2025)

warming, pollution, and natural disasters, all of which pose significant risks to both human societies and ecosystems.

Environmental security refers to a comprehensive set of legal, ecological-economic, scientific-methodological, engineering-technical, educational, social, pastoral, and other measures aimed at preventing the emergence and escalation of environmentally hazardous situations, as well as mitigating and eliminating threats caused by environmental pollution and natural resource depletion. Additionally, it encompasses the protection of human life, health, and the property interests of individuals and legal entities from the adverse impacts of environmentally dangerous sources.

Environmental security can be distinguished into "global" and "national" contexts. The distinction between these terms depends primarily on the nature and scale of destabilizing factors, threats, and risks taken into account. For example, global environmental security addresses technological accidents, disasters, and hazardous natural phenomena, as well as the disparity between the growth rates of the global economy and population versus the planet's ecological capacity to meet increasing human demands. Issues such as surpassing Earth's ecological potential and carrying capacity, climate change, the greenhouse effect, and ozone layer depletion are central at this level. Additional global concerns include imbalances in the distribution of ecological resources and the attempts by some developed nations to unilaterally enhance their environmental conditions at the expense of the ecological spaces of other countries¹.

Information (cyber) security has emerged as a crucial component of international security due to the rapid advancement of technology and the growing reliance on digital infrastructure. The protection of critical information, communication networks, and infrastructure from cyber threats is vital for national security and global stability. Cybersecurity agreements and cooperation between nations, supported by organizations like INTERPOL, are key in addressing the risks posed by cyberattacks, cyber espionage, and information warfare. The spread of disinformation and the manipulation of public opinion through digital means further highlight the importance of information security in the modern world.

The internet has brought the world closer, yet simultaneously exposed it to new, increasingly sophisticated, and diverse threats. With rapid technological advancements, cyber threats have evolved significantly, requiring cybersecurity to be viewed both as a specialized domain managed by dedicated cloud-based companies and as an essential component of comprehensive protection against continually emerging risks. Cybersecurity involves safeguarding internet-connected systems—including hardware, software, and data—from cyberattacks. It ensures both digital and physical security, preserving the confidentiality, integrity, and availability of information. The need for cybersecurity arises from the scale and variety of threats targeting government and corporate networks, particularly cyberterrorism, cyberwarfare, and cyberespionage. Cyberterrorism refers to the politically motivated use of information technology by terrorist groups to attack networks and critical infrastructure. Cyberwarfare involves state-sponsored hacking aimed at causing harm to other nations and is increasingly recognized as a new dimension of armed conflict. Lastly, cyberespionage encompasses unauthorized access to sensitive data for obtaining strategic or economic advantages².

¹ Morgacheva, N. V., & Levashova, O. V. (2021). Environmental education in the system of sustainable development values formation. IOP Conference Series: Earth and Environmental Science, 677, 042115. <https://iopscience.iop.org/article/10.1088/1755-1315/677/4/042115/pdf> (accessed on 07.04.2025)

² Seemma, P.S, & Sundaresan, Nandhini & M, Sowmiya. (2018). Overview of Cyber Security. IJARCC. 7. 125-128. 10.17148/IJARCC.2018.71127. https://www.researchgate.net/publication/329678338_Overview_of_Cyber_Security (accessed on 06.04.2025)

Humanitarian security focuses on the protection of human rights, the provision of aid during humanitarian crises, and the safeguarding of civilian populations. This aspect of security is deeply concerned with preventing atrocities such as genocide, ensuring the protection of refugees and migrants, and responding to mass violations of human rights. Humanitarian organizations, including the UN and the Red Cross, play an essential role in addressing these issues and providing assistance to those affected by conflict, displacement, and persecution.

Humanitarian security and human development are person-centered concepts, standing in contrast to traditional approaches that prioritize state security and economic growth. Both concepts emphasize the intrinsic value of human beings, viewing individuals as ends in themselves rather than means to an end. Moreover, they position individuals as active participants in addressing their own needs. These concepts are inherently multidimensional, encompassing not only material well-being but also issues related to human dignity, placing responsibility for their realization upon the entire international community.

Humanitarian security is defined as "freedom from" threats and dangers, giving it an individual-centered orientation: the primary object of protection is not a group but the individual person. The obligation to ensure these freedoms rests with states and the international community, rooted in the universality of human rights. This distinguishes humanitarian security from politicized approaches that focus predominantly on reforming governance systems. Additionally, the concept raises important questions about the responsibility of international actors in cases where states fail to protect their citizens, prompting a reconsideration of sovereignty as a trust-based mandate granted by society¹.

Biological and sanitary-epidemiological security aims to prevent the spread of dangerous infections, pandemics, and the use of biological agents in warfare. The recent COVID-19 pandemic has underscored the importance of global cooperation in managing health crises and preventing the spread of infectious diseases. The World Health Organization (WHO) and international health agreements play a central role in monitoring, preventing, and responding to health threats. The emergence of bioterrorism as a potential threat also highlights the need for enhanced biological security measures.

Biosafety is a multifaceted concept frequently confused with bioterrorism and biodefense, although it differs significantly. In its broader sense, biosafety encompasses protection against infectious diseases, bioterrorism, biological warfare, malicious use of biotechnology, and ensuring safety within laboratory environments and the broader ecosystem. In its narrower interpretation, biosafety specifically addresses the safety of laboratory personnel and public environments.

Pandemics represent existential threats to both national and international security, with the potential to cause widespread loss of life and severe economic damage. Insufficient preparedness for infectious diseases constitutes a critical vulnerability in global security that is often overlooked by the international community. National strategies for pandemic response emphasize the importance of preparedness for biological threats, as such crises can erode public trust in government institutions and destabilize security frameworks².

Therefore, biosafety, particularly in the context of global threats such as COVID-19, underscores the necessity of building resilience and preparedness to biological risks across all security levels.

¹ Holliday, Ian & Howe, Brendan. (2011). Human Security: A Global Responsibility to Protect and Provide. Korean Journal of Defense Analysis. 23. https://www.researchgate.net/publication/266445910_Human_Security_A_Global_Responsibility_to_Protect_and_Provide (accessed on 05.04.2025)

² Albert C, Baez A, Rutland J. Human security as biosecurity: Reconceptualizing national security threats in the time of COVID-19. Politics and the Life Sciences. 2021;40(1):83-105. https://www.cambridge.org/core/journals/politics-and-the-life-sciences/article/human-security-as-biosecurity/CD0FD5BD3E3B576F0EDA15297081692F?utm_campaign=shareaholic&utm_medium=copy_link&utm_source=bookmark (accessed on 07.04.2025)

Finally, *energy security* is concerned with ensuring the stable and secure access to energy resources, which are vital for the functioning of modern economies. Energy security involves diversifying energy sources, securing energy supplies, and building strategic reserves to protect against disruptions. Threats to energy security include energy dependence, the vulnerability of critical infrastructure, and the potential for supply blockades, all of which can have far-reaching consequences for both national economies and international relations.

The term "energy security" gained widespread prominence after the 1973 OPEC oil embargo, which triggered a global energy crisis. In response, key strategic measures were implemented, including the establishment of the International Energy Agency (IEA), the development of guidelines for strategic energy reserves, and the introduction of stricter regulations aimed at enhancing energy efficiency across various sectors.

Major global consortia highlight the primary role of energy security as ensuring sustainable energy development. The IEA defines energy security as "the uninterrupted availability of energy sources at an affordable price." The issue of energy security encompasses three main categories of risks: geopolitical threats, natural and technological disasters, and economic instability linked to changing consumer preferences and market fluctuations¹.

The United Nations emphasizes the significance of reliable energy supply at fair prices. Typically, issues of energy security are categorized according to three types of countries: energy producers, importers, and transit states. Research often focuses on consumer countries, for whom key aspects include reliability of energy supply and energy independence.

Example of an Energy Crisis: Moldova's Experience

Energy security represents a critical dimension of national stability for the Republic of Moldova, particularly amid its ongoing accession process to the European Union (EU). Due to limited domestic energy resources, Moldova was highly dependent on imported energy, notably natural gas supplied predominantly by Russia. This reliance has exposed Moldova to significant geopolitical vulnerabilities, especially given Russia's frequent utilization of energy exports as a political instrument. The current energy crisis underscored Moldova's imperative to diminish its dependency on Russian gas and enhance its energy resilience through diversification, infrastructure modernization, and strengthened regional cooperation.

Left bank, historically depended on subsidized or free natural gas from Russia, facilitating its de facto autonomy. However, since 2022, Russia has substantially curtailed gas supplies to both banks, reshaping interactions between Chisinau and Tiraspol. This new dynamic has compelled both entities to reconsider their energy strategies, prompting the search for alternative energy sources to maintain stability.

The complete cessation of Russian gas supplies to the left bank beginning January 1, 2025, precipitated significant socio-economic disruption. Industrial activities declined sharply, energy shortages intensified, and residents experienced frequent power outages and heating deficits. This energy crisis has highlighted the necessity for proactive Moldovan engagement to support left bank's energy transition and ensure stable energy provision for its population.

The ongoing conflict in Ukraine has exacerbated Moldova's energy security challenges. To address its critical energy vulnerabilities, Moldova has implemented several key strategies since 2022. These include securing alternative energy supplies from EU partners, adopting energy-saving measures that notably reduced electricity consumption during the state of emergency declared in December 2022, and advancing integration into the EU energy market.

¹ Gitelman, L.; Magaril, E.; Kozhevnikov, M. Energy Security: New Threats and Solutions. *Energies* **2023**, *16*, 2869. <https://www.mdpi.com/1996-1073/16/6/2869> (accessed on 07.04.2025)

In order to implement the energy transformation, the Republic of Moldova has developed a long-term energy strategy aimed at reducing dependence on fossil fuels and increasing production capacities for energy production from renewable sources. This strategy includes the following objectives: increasing the share of energy production from renewable sources to 40% in the energy mix by 2030; reducing energy consumption by improving energy efficiency in households and the industrial sector; developing infrastructure for charging electric vehicles; increasing the capacity for storing electricity; increasing the capacity for connecting to the energy networks of neighboring countries.

In this direction, the Republic of Moldova receives financial and technical support from the European Union and other international organizations to implement the necessary measures for the implementation of the energy transformation. In addition, organizations and associations that support the energy transformation in the Republic of Moldova have been created and are developing, such as the Sustainable Energy Association of Moldova.

Moldova's approach to enhancing energy security involves:

1. Diversification of energy sources, primarily through increased collaboration with EU states, exemplified by initiatives such as the Romania-Moldova electricity interconnection projects.
2. Investment in renewable energy, including solar, wind, and biomass, aligning Moldova's energy policy with EU climate objectives. Current renewable capacities, however, are insufficient and necessitate substantial regulatory and financial investment.
3. Infrastructure modernization to enhance resilience against supply disruptions and cybersecurity threats, including upgrading the national grid and developing energy storage capacities.
4. Regional cooperation and integration within the European energy framework, leveraging partnerships with Romania, Ukraine, and other EU nations to minimize geopolitical vulnerabilities.
5. Promotion of energy efficiency to reduce overall energy demand, thus enhancing economic stability and resilience against future energy crises.

Looking forward, Moldova must continue to prioritize energy diversification, renewable investments, infrastructure enhancements, and regional integration to secure long-term energy resilience. Energy crisis on the left bank exemplifies the risks associated with extreme dependence on external energy sources. Moldova's situation reflects broader regional trends in Eastern Europe, where nations seek to mitigate reliance on Russian energy through diversification and sustainable energy policies. Ultimately, achieving energy security is pivotal to Moldova's sovereignty, strategic autonomy, and economic stability.

Conclusion

In conclusion, international security represents a complex, multidimensional framework designed to address diverse and evolving global threats. In an increasingly interconnected world, challenges such as military conflicts, economic instability, environmental crises, cybersecurity threats, humanitarian emergencies, biological risks, and energy vulnerabilities require collective solutions and effective international collaboration. Recognizing the interconnectedness of these dimensions is critical to developing comprehensive strategies that ensure global stability, sustainable development, and the peaceful coexistence of nations.

Given the rapid pace of globalization and technological advancements, traditional state-centered approaches to security have become insufficient, prompting the international community to adapt and rethink security strategies. New threats transcend national borders, highlighting the necessity for shared responsibility and cooperation among states, international organizations, civil society, and the private sector. Effective international security measures should therefore incorporate diverse perspectives, prioritize human welfare, and remain flexible to accommodate emerging threats.

Ultimately, achieving global security demands a continuous commitment to dialogue, mutual trust, and the proactive establishment of mechanisms aimed at prevention,

preparedness, and resilience. The effectiveness of international security policy will increasingly depend on its ability to foster inclusive partnerships, address root causes of instability, and support equitable development. Only through sustained, coordinated, and holistic efforts can the global community successfully navigate future challenges and build a secure and prosperous world for generations to come.

Global energy demand continues to rise, creating significant imbalances between energy-importing regions, such as Europe and Asia Pacific, and energy-exporting regions like the Middle East and the Commonwealth of Independent States (CIS). This imbalance underscores the need for a more equitable distribution of energy resources and strengthened international cooperation. In response to energy security challenges, countries have adopted various policy approaches. Europe has made significant progress in reducing its dependence on Russian gas by diversifying supply routes and investing in renewable energy. The Southern Gas Corridor is a key initiative aimed at reducing reliance on Russian energy supplies. Meanwhile, North America has focused on deregulating energy markets, fostering competition, and lowering consumer energy costs. However, barriers to widespread adoption of renewable technologies remain, particularly in developing countries where the high upfront costs of infrastructure pose challenges.

Based on the analysis, it can be concluded that energy security is a multifaceted concept encompassing three core dimensions: physical, economic, and environmental security. Ensuring physical security requires the diversification of energy supply chains to reduce vulnerabilities arising from geopolitical tensions, natural disasters, or other disruptions. Economic security is tied to the stability and predictability of energy prices, which are vital for maintaining industrial competitiveness and fostering long-term economic growth. Environmental security, in turn, emphasizes the urgent need to transition to low-carbon and sustainable energy systems, aiming to mitigate climate change while ensuring continued access to reliable energy sources.

Balancing these interconnected dimensions is critical for developing energy systems that are not only sustainable and resilient, but also aligned with broader objectives of national security and global environmental responsibility.

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