

# Comprehensive Analysis Report

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## Topic of Analysis

Impact on Moldova of Gazprom's decision to cut gas supplies

## 1. Executive Summary

### *Current Situation in Depth*

As of January 1, 2025, Moldova is grappling with a severe energy crisis following Gazprom's abrupt cessation of natural gas deliveries. Gazprom, Russia's state-owned energy giant, justified the cut by citing unpaid debts amounting to \$709 million, a figure contested by Moldova, which references an international audit reducing the debt to \$8.6 million. This decision coincided with the expiration of the five-year gas transit contract between Gazprom and Ukraine's Naftogaz on December 31, 2024, effectively eliminating a crucial transit route for Russian gas to Europe and directly impacting Moldova's energy supply. The immediate repercussions have been most acute in Transnistria, a breakaway region heavily reliant on Russian gas for its Cuciurgan power plant, leading to widespread blackouts and the suspension of key industrial activities, including operations at Moldova Steel Works JSC. Concurrently, the Moldovan government, led by the pro-European Party of Action and Solidarity (PAS), has declared a state of emergency, implementing energy-saving measures such as dimming lights by 30 percent in public and commercial buildings and seeking alternative gas sources from Romania and other European markets. The energy supply cut has resulted in increased energy prices, economic strain on both consumers and businesses, and heightened political instability ahead of the upcoming parliamentary elections in the latter half of 2025.

### *Explore the Underlying Interdependencies*

The energy crisis in Moldova is a product of intricate interdependencies among various actors and structural forces. Gazprom's historical monopoly on gas supplies established a significant power imbalance, rendering Moldova vulnerable to supply disruptions. The termination of the transit agreement with Ukraine, a key player in the regional energy network, forced Moldova to pivot towards alternative sources, primarily Romania, to fill the energy void. This shift has not only increased energy costs but has also reshaped strategic incentives, reducing Russia's leverage over Moldova while binding the country closer to the European energy market. The involvement of the European Union (EU) introduces another layer of interdependency, as EU financial and technical support is crucial for Moldova's ongoing diversification efforts and infrastructure development, such as the completion of energy interconnection lines with Romania and the expansion of renewable energy capacity. Additionally, the humanitarian needs in Transnistria create feedback loops where economic strain exacerbates political instability, potentially increasing public discontent and affording Russia opportunities to reassert influence through limited aid or continued energy manipulation. The delicate balance between securing alternative energy sources and managing financial obligations to Gazprom exemplifies how changes in one component of the system can ripple through, altering strategic payoffs and influencing the overall stability of Moldova's energy landscape.

### *Use Multi-Lens Insights to Explain Why It Matters*

Analyzing Moldova's energy crisis through multiple analytical lenses reveals the profound significance of Gazprom's gas supply cut. From an actor mapping perspective, the power dynamics are stark; Gazprom, backed by the Russian government, holds substantial economic and political sway over Moldova, which is striving to align more closely with the EU. This imbalance underscores the strategic use of energy as a tool for geopolitical influence. Entropy analysis highlights the heightened disorder and unpredictability within Moldova's energy system, exacerbated by the sudden suspension of gas supplies and the ensuing scramble for alternative sources. This increase in entropy correlates with instability, making the system more susceptible to further shocks and complicating effective decision-making. Complex systems theory illustrates the intricate feedback loops and interdependencies that connect energy supply to political stability and economic health, demonstrating how disruptions in one area can cascade into multiple facets of national functioning. Game theory sheds light on the strategic interactions between Gazprom, the Moldovan government, and the EU, where each actor's decisions are interdependent and aimed at maximizing their respective gains while mitigating losses. The combined insights from these lenses illustrate a multifaceted crisis where energy, politics, and economics intersect, emphasizing the critical importance of Moldova's response in determining its future trajectory and regional stability.

## ***Potential Futures***

### **#### Managed Transition**

In a managed transition scenario, Moldova successfully navigates the energy crisis through robust EU support and effective implementation of alternative supply routes from Romania and other European sources. Continued investment in renewable energy infrastructure bolsters the country's energy resilience, allowing it to meet demand despite higher costs associated with alternative imports. Humanitarian aid and limited conditional resupplies from Gazprom mitigate the immediate crisis in Transnistria, preventing widespread social unrest. The government's transparent communication and decisive actions maintain public trust, ensuring political stability ahead of the parliamentary elections. This scenario, with a medium-high probability, hinges on sustained international support and the successful scaling of diversification initiatives, ultimately strengthening Moldova's energy independence and reinforcing its alignment with the EU.

### **#### Significant Disruption**

Should Moldova face a harsh winter combined with failures in critical infrastructure, such as the Romanian interconnector or continued gas shortages, the country may experience significant disruptions. Prolonged energy shortages could lead to extended blackouts, economic downturns due to halted industrial activities, and widespread public discontent. The humanitarian situation in Transnistria could deteriorate further, sparking protests and possibly prompting increased Russian intervention to stabilize the region. Political instability may ensue as the government's handling of the crisis comes under intense scrutiny, potentially shifting political power towards factions sympathetic to Russia. This scenario carries a medium probability and underscores the vulnerabilities in Moldova's current energy diversification strategy.

### **#### Humanitarian Crisis in Transnistria**

In a less probable but severe scenario, the complete and prolonged cessation of gas supplies to Transnistria leads to an acute humanitarian crisis. Basic services such as heating, electricity, and water supply collapse, forcing residents to migrate in search of necessities. The crisis could overwhelm Moldova's capacity to provide aid, necessitating significant international intervention. Social unrest may spread, destabilizing the region and straining relations between Moldova and Transnistria. The severity of human suffering and potential for widespread displacement could galvanize international condemnation of Russia, intensifying geopolitical tensions. This scenario highlights the critical need for immediate humanitarian response and sustained efforts to stabilize energy supplies in the breakaway region.

#### #### Limited Resumption of Russian Supply

In an unlikely turn of events, Gazprom offers a limited and conditional resumption of gas supplies to Moldova, perhaps tied to partial debt repayments or political concessions. While this provides temporary relief from energy shortages, it reinforces Moldova's ongoing vulnerability to Russian influence. The conditions attached to the resumption may lead to domestic political debates and divisions, complicating Moldova's long-term energy independence efforts. This temporary solution may stabilize the immediate crisis but fails to address the underlying structural issues, maintaining the status quo of dependence on Gazprom. The probability of this scenario remains low, given Moldova's strategic objectives to reduce reliance on Russian energy and the broader geopolitical context.

### ***Conclusion***

Moldova's energy crisis, precipitated by Gazprom's decision to cut gas supplies, underscores the complex interplay of political, economic, and social factors within a highly interconnected system. The immediate consequences—severe energy shortages, economic strain, and political instability—are compounded by deeper structural dependencies and geopolitical tensions. Through the lenses of complex systems, entropy, actor mapping, and game theory, it becomes evident that Moldova's path forward is fraught with challenges but also opportunities for strategic realignment and resilience-building. The country's efforts to diversify energy sources, bolster infrastructure, and secure international support are pivotal in mitigating the current crisis and paving the way for a more stable and independent energy future. The potential futures range from a managed transition bolstered by EU cooperation to significant disruptions and humanitarian crises, each shaped by the transformative capacity of Moldova's institutions and the strategic maneuvers of key regional actors. As Moldova navigates this critical juncture, its ability to adapt and leverage international partnerships will determine its long-term stability and geopolitical orientation.

## **2. Impact Analysis**

### **2.1 Humanitarian Impact Analysis**

#### ***Impacts on Vulnerable Populations***

The energy crisis in Moldova, triggered by Gazprom's gas supply cut, disproportionately impacts vulnerable populations. Children are at risk due to disruptions in heating and access to nutritious food, potentially leading to increased respiratory illnesses and malnutrition. The elderly, particularly those with pre-existing health conditions, face heightened risks from cold exposure and limited access to healthcare. Persons with disabilities, often reliant on consistent access to services and support, are particularly vulnerable to disruptions in heating, electricity, and transportation. Marginalized communities, including low-income families and rural populations, are more susceptible to the economic shocks of rising energy and food prices, with fewer resources to cope with the crisis. These groups often have limited access to information, making them less able to adapt to the rapidly changing situation. Pre-existing vulnerabilities, such as poverty and limited access to healthcare, are exacerbated by the crisis, reducing their coping mechanisms and increasing their reliance on external aid.

#### ***Regions Most Impacted***

Transnistria is the region most severely impacted by the energy crisis. The region's heavy reliance on Russian gas for heating, electricity, and industrial activities makes it exceptionally vulnerable to the supply cut. The Cuciurgan power plant, located in Transnistria, is a critical source of electricity for both Transnistria and Moldova, and its reduced operation due to the gas shortage has led to

widespread blackouts and industrial shutdowns. The lack of alternative energy sources in Transnistria, coupled with its political isolation, exacerbates the humanitarian crisis. While the right bank of the Dniester river in Moldova has diversified its gas sources, it is still affected by the increased electricity prices and the potential for disruptions in the power supply from Transnistria. Rural areas across Moldova, with limited access to alternative heating and energy sources, are also particularly vulnerable to the economic impacts of the crisis. These regions are more likely to experience food insecurity due to disruptions in agricultural production and supply chains.

## ***Displacement and Migration***

The energy crisis has the potential to cause significant displacement within Moldova, particularly from Transnistria. The severe lack of heating, electricity, and water in Transnistria could force residents to migrate to other parts of Moldova in search of basic necessities. This internal displacement could strain resources in other regions of Moldova, particularly in urban areas. The likelihood of refugee flows to neighboring countries is moderate. While the majority of displaced individuals are likely to seek refuge within Moldova, some may attempt to cross borders into Romania or Ukraine, particularly if the humanitarian situation in Transnistria deteriorates further. The impact on neighboring countries would depend on the scale of the refugee flows, potentially straining their resources and infrastructure. Romania, with its stronger economy and existing ties to Moldova, is likely to be the primary destination for any refugees.

## ***Food Security***

The energy crisis poses a significant threat to food security in Moldova, particularly in Transnistria. The disruption of gas supplies has a cascading effect on food production, distribution, and access.

**\*\*Food Production:\*\*** The agricultural sector, which accounts for a significant portion of Moldova's GDP, is directly impacted by the energy crisis. Greenhouse operations, which rely on heating, are severely affected, leading to reduced production of fruits and vegetables. Livestock farming is also impacted by the lack of heating and potential disruptions in feed supplies. The shutdown of industrial activities in Transnistria, including the Moldova Steel Works JSC, has a knock-on effect on the availability of agricultural inputs, such as fertilizers and machinery. The reduced operation of the Cuciurgan power plant, which has switched to coal but operates at reduced capacity, further limits the energy available for agricultural processing and storage.

**\*\*Food Distribution:\*\*** The energy crisis disrupts supply chains, leading to increased transportation costs and potential delays in the delivery of food products. The lack of electricity can affect food storage facilities, leading to spoilage and reduced availability of perishable goods. The closure of industrial activities in Transnistria also disrupts the production and distribution of processed foods. The potential for internal displacement further complicates distribution efforts, as displaced populations may be concentrated in areas with limited infrastructure.

**\*\*Food Access:\*\*** The most immediate impact on food access is the increase in food prices due to higher production and transportation costs. This price inflation disproportionately affects vulnerable populations, who have limited purchasing power. The economic strain caused by the energy crisis reduces household incomes, making it more difficult for families to afford basic necessities, including food. The lack of heating and electricity also impacts the ability of households to prepare food, particularly in Transnistria, where many households lack alternative cooking methods. The potential for food shortages, particularly in Transnistria, increases the risk of malnutrition and food insecurity.

**\*\*Populations and Regions at Risk:\*\*** Transnistria is the region most at risk of food insecurity due to its heavy reliance on Russian gas and its political isolation. Vulnerable populations across Moldova, including the elderly, low-income families, and rural communities, are also at high risk due to their limited resources and coping mechanisms. The potential for internal displacement further

exacerbates food insecurity in areas receiving displaced populations.

### ***Healthcare Access***

The energy crisis has a significant impact on healthcare systems and access to essential medical services. The lack of electricity disrupts the operation of hospitals and clinics, limiting their ability to provide essential services. Shortages of medical supplies, including medicines and vaccines, are likely due to disruptions in supply chains and increased transportation costs. The potential for displacement and injuries increases the demand for healthcare services, further straining already limited resources. The lack of heating in healthcare facilities poses a risk to patients, particularly the elderly and those with pre-existing health conditions. The disruption of transportation networks limits access to healthcare for those living in remote areas. The overall impact is a reduction in the quality and availability of healthcare services, particularly for vulnerable populations.

### ***Spillover Effects to Other Countries***

The humanitarian crisis in Moldova has the potential to affect neighboring countries and the broader region. Refugee flows to Romania and Ukraine could strain their resources and infrastructure. The economic impact of the crisis, particularly on agricultural production and trade, could lead to higher food prices in neighboring countries, particularly for products where Moldova is a significant producer. The political instability in Moldova could have regional implications, potentially increasing tensions between Russia and the EU. The crisis could also be exploited by other actors with geopolitical interests in the region, potentially shifting the balance of power. The potential for the crisis to spread to other countries is moderate, but the risk of regional instability is significant.

### ***Number of People in Need***

Estimating the precise number of people in need is challenging due to the rapidly evolving situation and the lack of specific, up-to-date data. However, based on the available information, a reasonable estimate can be made.

**\*\*Transnistria:\*\*** The population of Transnistria is approximately 470,000. Given the complete cessation of gas supplies and the resulting lack of heating, electricity, and industrial activity, it is reasonable to assume that the entire population of Transnistria is currently in need of humanitarian assistance. This includes access to heating, electricity, food, water, and healthcare.

**\*\*Moldova (excluding Transnistria):\*\*** The population of Moldova (excluding Transnistria) is approximately 2.6 million. While not all of this population is in immediate need of humanitarian assistance, a significant portion is vulnerable to the economic impacts of the energy crisis, particularly rising energy and food prices. Based on the available information, it is reasonable to estimate that at least 20% of the population (approximately 520,000 people) are facing food insecurity and are in need of humanitarian assistance. This includes low-income families, the elderly, and rural populations.

**\*\*Total Estimate:\*\*** Combining the estimates for Transnistria and Moldova, it is reasonable to estimate that **\*\*at least 990,000 people are currently in need of humanitarian assistance\*\*** as a result of the energy crisis. This number could be higher if the crisis escalates further or if the humanitarian situation in Transnistria deteriorates significantly. The number of people facing food insecurity is likely to be a significant portion of this total, potentially reaching 700,000 or more.

**\*\*Basis for Estimate:\*\*** This estimate is based on the following factors:

\* The complete cessation of gas supplies to Transnistria and the resulting humanitarian crisis. \* The economic impacts of the energy crisis on vulnerable populations in Moldova, particularly rising energy and food prices. \* The potential for internal displacement and the resulting strain on

resources. \* The lack of specific, up-to-date data on the number of people affected, requiring a reasonable estimate based on the available information.

It is important to note that this is an estimate, and the actual number of people in need may be higher or lower. Continuous monitoring of the situation and the collection of more specific data are crucial for a more accurate assessment.

### 3. Background Information

**\*\*Brief Report: Moldova's Gazprom Gas Supply History Pre-2024\*\***

**\*\*Key Facts and Dates:\*\***

1. **\*\*Historical Dependence on Gazprom:\*\***

- - Moldova traditionally relied on the Russian Federation for natural gas procurement, with Gazprom being the sole supplier until recent diversification efforts[1][4].

2. **\*\*Contractual Obligations:\*\***

- - The contract between Moldovagaz and Gazprom ended in September 2021, leading to a new contract that increased the price by 500% and was set to expire in October 2026[4].

3. **\*\*Diversification Efforts:\*\***

- - In October 2021, Gazprom reduced gas volumes to Moldovagaz, prompting Moldova to import gas from the West through Alexeevka and Iasi, marking the first auctions with European traders[1].
- - By December 2022, Chisinau completely stopped purchasing gas from Gazprom for the right bank of the Dniester, instead covering needs with gas procured from the European market[1][4].

4. **\*\*Infrastructure Changes:\*\***

- - In September 2023, the gas transmission system was handed over to Vestmoldtransgaz, a subsidiary of Romania's Transgaz, fulfilling Moldova's commitments to European institutions[1].

5. **\*\*Economic Impact:\*\***

- - Diversification allowed for cheaper gas purchases from the European market. For example, in October 2023, Energocom sold gas to Moldovagaz for \$605/1000 cubic meters, compared to Gazprom's offer of \$830/1000 cubic meters, saving Moldovan consumers over \$60 million in 2023[1].

6. **\*\*Debt and Disputes:\*\***

- - Moldova and Transnistria have significant debts to Gazprom, with Moldova owing over \$709 million and Transnistria over \$9 billion, partly due to unpaid gas deliveries since 1994[4].

**\*\*Main Consequences and Causal Relationships:\*\***

- **\*\*Diversification and Market Changes:\*\*** Moldova's efforts to diversify gas sources led to a reduction in dependence on Gazprom, allowing for cheaper gas purchases from the European market.
- **\*\*Contractual and Infrastructure Changes:\*\*** The end of the contract with Gazprom and the transfer of the gas transmission system to Vestmoldtransgaz marked significant shifts in Moldova's energy landscape.
- **\*\*Economic and Political Implications:\*\*** The changes in gas supply dynamics have had significant economic and political implications, including savings for consumers and potential impacts on Moldova's political landscape, particularly in the context of upcoming parliamentary elections[5].

**\*\*Sources:\*\***

- [1] <https://energie.gov.md/en/content/gas-market-gazprom-monopoly-gas-different-sources-and-regions-world-article>
- [4] [https://en.wikipedia.org/wiki/Energy\\_in\\_Moldova](https://en.wikipedia.org/wiki/Energy_in_Moldova)
- [5] <https://www.wilsoncenter.org/blog-post/russias-energy-cutoff-moldova-crisis-or-opportunity>

## **\*\*Moldova-Russia Energy Dependence Timeline: Recent Developments\*\***

### **\*\*Key Points and Timeline:\*\***

1. **\*\*January 1, 2025\*\***: The five-year natural gas transit contract between Russia's Gazprom and Ukraine's Naftogaz expired, leading to the cessation of Russian gas transit through Ukraine. This has significantly impacted Moldova, causing an energy crisis and political instability[1][5].
2. **\*\*December 13, 2024\*\***: The Moldovan government declared a state of emergency over energy concerns, instituting energy-saving measures such as dimming lights in public and commercial buildings by 30 percent[1].
3. **\*\*October 2022\*\***: Gazprom cut gas supplies to Moldova by 30 percent, citing technical issues related to Ukraine's transit. This led to reduced electricity from Transnistria's Cuciurgan plant, forcing Moldova to buy electricity from Romania at higher prices[3].
4. **\*\*October 2021\*\***: Russia engineered an energy crisis in Moldova by demanding a significant price increase for gas and reducing supplies. This forced Moldova to declare a state of energy emergency and eventually sign a five-year contract with Gazprom, postponing EU-driven gas reforms[3].
5. **\*\*June 2022\*\***: Moldova obtained the status of formal candidate for EU membership, prompting efforts to reduce energy dependence on Russia. This included constructing a gas pipeline from Iasi in Romania to Chisinau and purchasing electricity from Romania[5].

### **\*\*Consequences and Future Directions:\*\***

- **\*\*Energy Crisis\*\***: The cessation of Russian gas transit has left Moldova, particularly the Transnistrian region, in a severe energy crisis with rolling blackouts and rising prices for light and heat[1][5].
  - **\*\*Political Instability\*\***: The energy crisis is likely to negatively impact Moldova's ruling pro-European Party of Action and Solidarity (PAS) in parliamentary elections due in the second half of 2025[5].
  - **\*\*Long-term Solutions\*\***: Moldova needs to diversify its electricity generation by building a large power plant on the right side of the Nistru River and increasing the share of renewables. Investing in new natural gas import routes, either through pipelines or LNG, would further enhance energy security by reducing Russia's leverage[3].
  - **\*\*EU Support\*\***: Financial support from the EU may be necessary to maintain social backing for the reformist government as the transition away from Russian energy may bring economic pressure with rising energy costs affecting the population[3].
- \*\*Conclusion:\*\*** Moldova's energy dependence on Russia has led to recurring crises, with the latest being the most severe due to the cessation of Russian gas transit through Ukraine. The country must focus on long-term solutions to diversify its energy sources and reduce Russia's influence to achieve energy security and stability.

## **\*\*Moldova's Energy Diversification Efforts and EU Agreements: Recent Developments\*\***

Moldova is actively pursuing energy diversification efforts to reduce its dependence on Russian energy supplies. Here are the key points and recent developments:

### 1. **\*\*Energy Supply Challenges for 2025\*\***:

- - **\*\*Contract with Nuclearelectrica Cernavodă\*\***: Moldova has signed a contract with Nuclearelectrica Cernavodă for the delivery of 100 MW at a fixed price to address potential power outages starting January 1, 2025[1].

- - **Additional Energy Sources**: Another 100 MW is set to be contracted from the Brazi Thermal Power Plant, and up to 100 MW of variable energy will be supplied by renewable sources. The Costești-Stânca Hydroelectric Plant will provide a stable contribution of 10 MW in base load[1].
2. **Energy Crisis and Reunification**:
    - - **State of Emergency**: Moldova has announced a state of emergency ahead of a likely end to Russian natural gas supplies via Ukraine from January 1, 2025[2].
    - - **Energy Dependence**: Despite efforts to diversify, Moldova still relies on cheap electricity from Transnistria, which is produced from Russian gas. The government is exploring options to buy European gas to keep the lights on in Transnistria, which could lead to price rises for consumers[2].
  3. **Green Energy Targets**:
    - - **Renewable Energy Production**: Moldova aims to increase the share of renewable energy production to a minimum of 30% of electricity consumption by 2030 and reduce greenhouse gas emissions by approximately 70% by 2030 compared to 1990 levels[4].
    - - **Energy Interconnection Lines**: The Moldovan government has secured external financing to construct 300 kilometers of energy interconnection lines with Romania, enhancing the security and reliability of the national electric power system[4].
  4. **EU Support**:
    - - **European Investment Bank (EIB) Agreements**: The EIB and the government of Moldova signed agreements for a €200 million loan for forest development and a €12 million EU grant for railway infrastructure improvements, aiming to enhance Moldova's green transition and support regional trade routes[5].
- Key Dates**:
- **2022**: Moldova's energy landscape shifted significantly following the Russian invasion of Ukraine, leading to a swift connection to the European energy system[4].
  - **2024**: Moldova signed contracts with Nuclearelectrica Cernavodă and the Brazi Thermal Power Plant to secure additional energy supplies[1].
  - **2025**: Expected end to Russian natural gas supplies via Ukraine, prompting a state of emergency in Moldova[2].
- Conclusion**: Moldova is taking significant steps to diversify its energy sources and reduce dependence on Russian supplies. The recent agreements with the EU and efforts to increase renewable energy production are crucial for the country's energy security and green transition. However, the impending energy crisis and the need to support Transnistria pose significant challenges that require careful management.

## **Brief Report: Gazprom Gas Disputes with Moldova**

### **Key Facts and Dates:**

1. **Suspension of Gas Exports**: Gazprom, the Russian state-owned energy giant, announced on December 28, 2024, that it would suspend gas exports to Moldova from January 1, 2025, due to unpaid debts[1][3][5].
2. **Debt Dispute**: The dispute centers on a debt of \$709 million claimed by Gazprom, which Moldova disputes, citing an international audit that found the debt to be significantly lower at \$8.6 million[3][5].
3. **Impact on Moldova**: The halt in gas supplies could lead to severe power shortages in Moldova, particularly in the breakaway region of Transnistria, which relies heavily on Russian gas for electricity generation[1][3][5].
4. **Broader Implications**: The move by Gazprom also signals a potential complete halt of Russian gas exports via Ukraine to Europe after the current transit deal expires on December 31, 2024, affecting countries such as Slovakia, Austria, Hungary, and Italy[1][3][5].



5. **Moldova's Response**: Moldova has criticized the Russian decision as "oppressive tactics" and "energy blackmail," and has begun importing gas from Romania and utilizing storage capacities in Ukraine and Romania to mitigate the impact[3][5].

#### **Causal Relationships:**

- **Gazprom's Decision**: The suspension of gas exports is a direct result of the unresolved debt dispute between Gazprom and Moldova.
- **Impact on Moldova**: The halt in gas supplies could lead to power shortages in Moldova, particularly in Transnistria, due to its reliance on Russian gas for electricity generation.
- **Broader European Implications**: The potential end of the Ukraine transit deal could disrupt gas supplies to several European countries, highlighting the geopolitical tensions and energy security concerns in the region.

#### **Main Consequences:**

- **Energy Security Risks**: The dispute poses significant risks to Moldova's energy security, particularly in the winter months.
- **Geopolitical Tensions**: The move by Gazprom exacerbates geopolitical tensions between Russia and Moldova, as well as between Russia and Europe, over energy supplies and transit agreements.
- **Economic Impact**: The halt in gas supplies could have economic implications for Moldova and potentially for other European countries affected by the potential end of the Ukraine transit deal.

## **4. Systems and Strategic Analyses**

### **4.1 Complex Systems Analysis**

#### **Complex System Structure and Dynamics:**

**1.1 Component Identification and Network Mapping:**

- Identify:**
  - Gazprom:** The dominant energy supplier, acting as a powerful external force capable of disrupting Moldova's energy system. Its role is central to supply and price dynamics.
  - Moldovan Government (PAS):** The central governing body responsible for policy decisions, crisis management, and international relations. Its role is to mitigate the impact and secure alternative supplies.
  - Transnistrian Authorities:** A regional governing body heavily dependent on Russian gas and vulnerable to supply cuts. Their role is to manage the immediate crisis within their region and seek external aid.
  - Russian Government:** A key external actor whose political motivations heavily influence Gazprom's actions. Its role is to exert political and economic pressure on Moldova.
  - Ukrainian Government:** A transit country whose policies impact the flow of gas. Its role is now primarily focused on its own energy security and non-renewal of transit agreements with Russia.
  - European Union (EU):** A key external supporter offering financial and political assistance for diversification. Its role is to provide alternative frameworks and resources.
  - Romanian Government:** A neighboring country providing crucial alternative energy supplies and infrastructure. Its role is a vital source of immediate relief and long-term diversification.
  - Moldovan Citizens:** The population directly affected by energy prices and shortages. Their role is to respond to and be impacted by the unfolding crisis.
  - Transnistrian Residents:** The population most severely impacted by the gas cuts, facing immediate humanitarian challenges. Their role is to cope with severe shortages.
  - Moldovagaz:** The intermediary gas distribution company, partially owned by Gazprom, caught in the middle of the dispute. Its role is primarily operational but also involves navigating the debt issue.
  - Naftogaz:** The former transit operator, now less relevant to the immediate supply to Moldova, but indicative of past dependencies.
  - International Financial Institutions:** Providers of loans and grants for energy infrastructure and diversification. Their role is to support long-term resilience.

**Describe the relationships and**

interactions: \* \* \* **Causal Links:** \* \* \* **Direct:** \* Gazprom's decision to halt supply directly causes energy shortages in Moldova and Transnistria (Article Summaries 1, 2, 3). Reduced gas supply to the Transnistrian power plant directly leads to electricity shortages in Moldova (Article Summary 2). Moldova's increased reliance on Romanian electricity imports directly leads to higher energy prices (Article Summary 2). \* \* \* **Indirect:** \* The debt dispute between Gazprom and Moldovagaz indirectly influences Gazprom's decision to cut supplies (Article Summary 3). The expiration of the Ukraine-Russia gas transit agreement indirectly forces Moldova to seek alternative routes (Article Summary 1). \* \* \* **Specific Examples:** \* Gazprom halting gas (Component) causes blackouts in Transnistria (Component) and shutdown of industry (Component) (Article Summary 1). Increased electricity imports from Romania (Component) lead to higher energy prices for Moldovan citizens (Component) (Article Summary 2). \* \* \* **Strength and Nature:** \* The influence of Gazprom's supply decisions is **strong and negative**, leading to immediate and significant disruptions. The relationship between Moldova's diversification efforts and reduced reliance on Gazprom is **positive but developing**, with a weaker current influence but increasing potential. The impact of the Russian Government's political goals is **strong and negative**, shaping Gazprom's actions. \* \* \* **Feedback Loops:** \* \* \* **Reinforcing (Positive):** \* Decreased gas supply -> higher energy prices -> increased public dissatisfaction -> potential political instability -> further vulnerability to Russian influence (potentially leading to even less secure energy contracts). The humanitarian crisis in Transnistria -> appeals to Russia for aid -> increased Russian influence in Transnistria -> further dependence and divergence from Moldova. \* \* \* **Balancing (Negative):** \* Gazprom cuts supply -> Moldova seeks alternative sources (Romania, EU) -> reduced dependence on Gazprom -> decreased Gazprom's leverage. Energy crisis -> increased focus on energy efficiency and renewables -> reduced overall energy demand -> less vulnerability to supply shocks. \* \* \* **Specific Examples:** \* The rising energy prices (caused by the cut) might fuel public discontent, potentially destabilizing the Moldovan government (reinforcing loop). Conversely, the crisis is forcing Moldova to seek alternative supplies, thereby reducing its dependence on Gazprom (balancing loop). \* \* \* **Network Structure:** \* \* The energy supply network was historically **highly centralized** around Gazprom. Current efforts are aiming for a more **distributed** network with nodes connected to Romania and potentially other EU sources. The political network surrounding Moldova is a complex one, exhibiting elements of a **core-periphery** structure with Russia at the historical core, and the EU as an increasingly influential alternative core. \* \* \* **Implications of Topology:** \* The historical centralized structure made Moldova highly vulnerable to a single point of failure (Gazprom). The shift towards a more distributed network increases resilience but introduces new dependencies and complexities. Information diffusion about the crisis is rapid through media and social networks, both within Moldova and internationally, influencing public opinion and political responses. \* \* \* **Modularity:** \* \* The system exhibits some modularity. The energy sector can be considered a module, interacting with the political and economic modules. Transnistria can be viewed as a relatively distinct module in terms of energy supply, although highly coupled with Russia. \* \* \* **Module Interaction:** \* The disruption of the energy module has cascading effects on the political module (government stability) and the economic module (industrial production, prices). The political module (government policies) influences the energy module (diversification efforts). The Transnistrian module's energy crisis heavily impacts its economic and social stability, creating knock-on effects for Moldova's overall stability.

\* \* \* **1.2 System Properties:** \* \* \* **Boundaries:** \* \* The primary system boundary is the nation-state of Moldova, including its relationship with the breakaway region of Transnistria. \* The system interacts with the external environment through energy imports/exports, political relationships with Russia and the EU, and financial flows from international institutions. \* \* \* **Key Inputs:** \* Natural gas (historically from Gazprom, now increasingly from Romania), electricity (from Romania and domestic sources), financial aid from the EU, political pressure from Russia. \* \* \* **Key Outputs:** \* Economic activity, political stability, energy consumption, international diplomatic stances, humanitarian needs (especially in Transnistria). \* \* \* **Emergence:** \* \* \* **Emergent Properties:** \* The overall political instability arising from energy dependence was not predictable by simply examining individual gas molecules or power lines. The shift in geopolitical alignment towards the EU due to energy insecurity is an emergent outcome of the interplay of economic and political factors. The humanitarian crisis in Transnistria is an emergent property arising from the complex interplay of political decisions and resource scarcity. \* \* \* **Specific Examples:** \* The pro-EU sentiment

strengthening in Moldova due to Russia's energy tactics is an emergent political phenomenon. The blackouts in Transnistria leading to social unrest and appeals for aid are emergent social phenomena. \* \*\*Significance:\*\* Emergent properties highlight that the system's behavior is more than the sum of its parts. Understanding these emergent phenomena is crucial for effective policy interventions. \* \*\*Adaptation & Learning:\*\* \* The Moldovan government is actively adapting by seeking alternative energy sources (Romania pipeline, EU integration) in response to past disruptions and the current crisis (Article Summaries 1, 4). \* \*\*Examples of Adaptation:\*\* Moldova's construction of the gas pipeline from Romania and increased electricity imports are direct adaptations to reduce reliance on Russian gas (Background Information). The government's efforts to increase renewable energy capacity demonstrate a longer-term adaptation strategy (Article Summary 4). \* \*\*Mechanisms for Learning:\*\* Learning occurs through experiencing the negative consequences of energy dependence, analyzing past crises, and engaging with international partners (EU, Romania) for expertise and support. The government's policy shifts towards diversification reflect this learning process. \* \*\*Non-linearity:\*\* \* Gazprom's decision to cut off gas, seemingly triggered by a debt dispute (though politically motivated), has a disproportionately large impact on Moldova's economy and social stability (Article Summaries 1, 2). A relatively small change in gas flow can lead to widespread blackouts and industrial shutdowns. \* \*\*Specific Examples:\*\* The expiration of the relatively technical gas transit agreement between Russia and Ukraine had a major non-linear impact on Moldova's energy security. A seemingly small debt discrepancy between Gazprom and Moldova has triggered a significant energy crisis. \* \*\*Implications:\*\* Non-linearity makes prediction and control challenging. Small actions can have unforeseen and significant consequences, requiring careful consideration of potential ripple effects. \* \*\*Path Dependence:\*\* Moldova's historical reliance on Russian gas infrastructure and supply contracts has created a deep path dependency, making it difficult and costly to transition to alternative sources (Background Information). The presence of Transnistria, with its strong historical ties to Russia and reliance on Russian gas, further reinforces this path dependence. \* \*\*Examples:\*\* The existing gas pipelines are largely oriented towards Russia. The Transnistrian power plant is designed to run on Russian gas. These historical infrastructure choices limit current options. \* \*\*Implications:\*\* Path dependence means that past decisions constrain future choices. Overcoming this requires significant investment and policy changes to break free from established patterns.

\* \*\*1.3 Sensitivity and Resilience:\*\* \* \*\*Critical Nodes/Edges:\*\* \* \*\*Critical Node:\*\* The gas pipeline entering Moldova from Ukraine (now defunct) was a critical node. The Cuciurgan power plant in Transnistria remains a critical node for electricity supply (Article Summary 2), though its reliance on Russian gas makes it a vulnerability. \* \*\*Critical Edge:\*\* The now-expired gas transit agreement between Russia and Ukraine was a critical edge. Current critical edges are the interconnection points with Romania for gas and electricity. \* \*\*Why Critical:\*\* Failure of these nodes/edges disrupts the flow of essential resources, leading to widespread shortages. The reliance on a single supplier (Gazprom) made the system highly sensitive to disruptions at these points. \* \*\*Consequences of Failure:\*\* The current crisis demonstrates the consequences of the failure of the Ukraine transit route: energy shortages, economic disruption, and political instability. Failure of the Romanian interconnection would severely limit Moldova's alternative supply options. \* \*\*Redundancy and Diversity:\*\* \* Moldova is actively increasing redundancy and diversity by developing the gas pipeline with Romania and importing electricity from multiple sources (Article Summaries 1, 4). The development of renewable energy sources further enhances diversity (Article Summary 4). \* \*\*Examples:\*\* The gas interconnector with Romania provides a redundant supply route. Importing electricity from both Romania and potentially other neighbors creates supply diversity. \* \*\*Contribution to Resilience:\*\* Increased redundancy and diversity make the system less vulnerable to the failure of a single component or connection, enhancing its ability to withstand disruptions. \* \*\*Adaptive Capacity:\*\* \* Moldova's adaptive capacity is increasing as it actively pursues energy diversification and integrates with the EU energy market (Article Summaries 4, 5). The government's proactive measures to secure alternative supplies and declare a state of emergency indicate a degree of adaptive capacity. \* \*\*Enhancing Factors:\*\* EU support, investment in infrastructure, political will to diversify. \* \*\*Constraining Factors:\*\* Financial limitations, the ongoing influence of pro-Russian factions, the geographical proximity to Russia, and the unresolved issue of Transnistria. \* \*\*Examples of Adaptation:\*\* Successfully connecting to the European electricity grid

is a significant adaptation. The government's ability to quickly negotiate alternative gas supplies demonstrates adaptive capacity. Unsuccessful adaptations might include past reliance on promises from Gazprom that were not fulfilled.

#### **\*\*Probabilistic Future Evolutions and Foresight (Short-Medium Term):\*\***

**\* \*\*2.1 Scenario Planning with Probabilities:\*\* \* \*\*Scenario 1: Managed Transition (Probability: Medium-High)\*\* \* \*\*Key Drivers:\*\* Continued EU support, successful implementation of alternative supply routes (Romania), mild winter temperatures, no major escalation in the Russia-Ukraine conflict directly impacting Moldova. \* \*\*Events:\*\* Moldova successfully imports sufficient gas and electricity from Romania and other EU sources to meet demand, albeit at higher prices. The humanitarian situation in Transnistria is partially mitigated through international aid or limited resumed Russian supplies. Public discontent is manageable. \* \*\*Outcomes:\*\* Moldova navigates the winter without widespread blackouts. The government maintains stability. Efforts to diversify energy sources accelerate. The economic impact is significant but manageable. \* \*\*Scenario 2: Significant Disruption (Probability: Medium)\*\* \* \*\*Key Drivers:\*\* Harsh winter, failure of key infrastructure (e.g., Romanian interconnector), insufficient supply from alternative sources, escalation of the Russia-Ukraine conflict impacting regional energy infrastructure. \* \*\*Events:\*\* Moldova experiences periods of significant energy shortages and rolling blackouts. The humanitarian situation in Transnistria worsens considerably. Public discontent rises sharply, potentially leading to protests and political instability. \* \*\*Outcomes:\*\* Severe economic impact, potential for social unrest, increased pressure on the government, possible shift in political alignment towards pro-Russian forces if the current government is perceived as failing. \* \*\*Scenario 3: Humanitarian Crisis in Transnistria (Probability: Low-Medium)\*\* \* \*\*Key Drivers:\*\* Prolonged and complete cessation of gas supplies to Transnistria, coupled with a lack of effective international aid. Failure of the power plant in Transnistria. \* \*\*Events:\*\* Transnistria faces a severe humanitarian crisis with widespread lack of heating, electricity, and essential services. Mass movement of people seeking refuge. Increased tensions between Moldova and Transnistria, potentially requiring international intervention. \* \*\*Outcomes:\*\* Significant human suffering, potential for regional destabilization, strain on Moldova's resources, increased international condemnation of Russia. \* \*\*Scenario 4: Limited Resumption of Russian Supply (Probability: Low)\*\* \* \*\*Key Drivers:\*\* Geopolitical shift (unlikely in the short term), pressure from other European nations reliant on Russian gas, a tactical shift by Russia to appear less aggressive while maintaining influence. \* \*\*Events:\*\* Gazprom offers a limited and conditional resumption of gas supplies to Moldova, possibly tied to political concessions or debt repayments. This offer is met with skepticism and debate within Moldova and the EU. \* \*\*Outcomes:\*\* Temporary relief from energy shortages but reinforces Moldova's vulnerability. Complicates Moldova's diversification efforts. Creates political divisions within Moldova regarding the acceptance of Russian terms.**

**\* \*\*2.2 Tipping Points and Phase Transitions:\*\* \* \*\*Tipping Points:\*\* \* \*\*Failure of the Romanian Gas Interconnector:\*\* This would severely cripple Moldova's primary alternative gas supply, potentially triggering widespread energy shortages and social unrest. \* \*\*Collapse of the Transnistrian Power Plant:\*\* This would lead to a catastrophic loss of electricity for Moldova, with severe economic and social consequences. \* \*\*Widespread and Prolonged Blackouts:\*\* Crossing a threshold of public tolerance for blackouts could trigger significant social unrest and a loss of confidence in the government. \* \*\*Major Political Shift:\*\* A successful vote of no confidence or significant election gains by pro-Russian parties due to the energy crisis could represent a phase transition in Moldova's geopolitical orientation. \* \*\*Early Warning Signals:\*\* \* \*\*Increasing Price Volatility in the Romanian Energy Market:\*\* Indicates potential supply constraints or increased demand straining the system. \* \*\*Reports of Technical Issues or Reduced Flow on the Romanian Interconnector:\*\* Signals potential infrastructure vulnerability. \* \*\*Sharp Increase in Social Media Sentiment Expressing Anger and Despair over Energy Issues:\*\* Indicates rising public discontent. \* \*\*Increased Activity of Pro-Russian Political Groups and Disinformation Campaigns:\*\* Suggests attempts to exploit the crisis for political gain. \* \*\*Decreasing Levels in Gas Storage Facilities in Romania:\*\* Signals potential supply limitations for Moldova. \* \*\*Potential Consequences:\*\* Crossing these tipping points could lead to irreversible shifts in Moldova's energy security, political alignment, and social stability. A humanitarian crisis in Transnistria could have long-lasting regional**

consequences.

**2.3 Wildcards and Black Swans:** **Potential Wildcards:** A major cyberattack targeting critical energy infrastructure in Moldova or Romania. This could disrupt supply even with sufficient resources. A sudden and severe escalation of the Russia-Ukraine conflict directly impacting Moldova's territory. This could completely overwhelm any energy security plans. A major natural disaster impacting energy infrastructure in the region. A significant political upheaval within Moldova (unrelated to the energy crisis but exacerbated by it). A sudden, unexpected breakthrough in alternative energy technology that could be rapidly deployed. **System Response:** The system's response to such events would depend on the specific nature of the wildcard. A cyberattack would require cybersecurity expertise and resilience. A military escalation would necessitate security and humanitarian responses. The system's current focus on diversification and international partnerships offers some baseline capacity to adapt, but truly unexpected events would pose significant challenges.

**2.4 Sensitivity to Initial Conditions:** **Different Initial Conditions:** Higher Gas Storage Levels in Moldova Before the Cut: Would provide a buffer and delay the immediate impact of the supply cessation. Faster Implementation of the Romanian Interconnector: Would have provided greater capacity earlier, reducing vulnerability. Greater Political Unity within Moldova: Would have presented a stronger front against external pressure. **Key Sensitive Variables:** **Winter Temperatures:** A particularly harsh winter would drastically increase demand and strain the system. **The Level of EU Financial and Technical Support:** Crucial for the success of diversification efforts. **The Degree of Social Cohesion and Trust in Government:** Influences the system's ability to withstand shocks and implement necessary measures.

**2.5 Intervention Points and Leverage Points:** **Enhancing the Capacity of the Romanian Interconnector:** Increasing the volume of gas and electricity that can be transported provides a crucial buffer against supply disruptions. This is a high-leverage point as it directly addresses the supply vulnerability. **Investing Heavily in Renewable Energy Infrastructure:** While a longer-term solution, accelerating the development of solar, wind, and other renewable sources reduces dependence on external actors and enhances long-term energy security. **Targeted Support for Vulnerable Populations in Transnistria:** Providing humanitarian aid can mitigate the immediate suffering and potentially reduce tensions, preventing a deeper crisis. This is a point with moral and potentially strategic leverage. **Strengthening Cybersecurity Measures for Critical Energy Infrastructure:** Protecting against cyberattacks can prevent significant disruptions that could negate other efforts. This is a critical vulnerability point requiring intervention. **Proactive Communication and Transparency from the Moldovan Government:** Maintaining public trust and support through clear and honest communication about the situation and the government's efforts is essential for social stability during the crisis.

## 4.2 Entropy Analysis

1. **Conceptualizing Entropy in the System:** **Define entropy:** In the context of Gazprom's gas supply cut to Moldova, entropy can be understood as the degree of disorder and unpredictability within Moldova's energy system and its interconnected political and economic spheres. It represents the number of possible states the system could transition to given the shock of the gas cutoff. Higher entropy means a greater range of potential, less predictable outcomes. **Identify the key elements or factors that contribute to the overall entropy of the system:** **Number of actors and their heterogeneity:** Key actors include Moldova (government, consumers, businesses), Russia (Gazprom, political leadership), Transnistria (authorities, population, industries), Ukraine (transit country, historical ties), Romania (potential energy supplier), and the EU (providing support and seeking regional stability). Their diverse and often conflicting interests (energy security vs. political leverage, economic survival vs. geopolitical maneuvering) significantly contribute to the system's entropy. **Complexity of interactions:** The web of dependencies and interactions is complex. Moldova depends on gas for heating and electricity (partially sourced from

Transnistria which relies on Russian gas). The debt dispute adds another layer of complexity. Political motivations behind the cut further complicate the situation beyond purely economic factors. The involvement of Ukraine (and its refusal to extend the transit agreement) adds another dimension. \* \*\*Availability and distribution of information:\*\* Information asymmetry is a significant entropy driver. The true nature of Moldova's debt to Gazprom is contested. Gazprom's real motivations (economic vs. political leverage) are uncertain. The reliability and sustainability of alternative supply routes are also not fully clear. This lack of clarity increases the number of potential scenarios. \* \*\*Degree of uncertainty about the future:\*\* The future trajectory of gas supplies is highly uncertain. Will Gazprom resume supplies? Will alternative sources be sufficient and affordable? What will be the long-term economic and social consequences? This high degree of uncertainty is a major component of the system's entropy. \* \*\*Presence of conflicting goals or values:\*\* Moldova's goal of EU integration and energy independence clashes with Russia's desire to maintain influence in the region. Transnistria's dependence on cheap Russian gas creates a conflict with Moldova's overall energy security strategy. The economic needs of the Moldovan population conflict with the political strategies of both Russia and Moldova's government.

\* \*\*Explain how changes in these elements would affect the overall entropy of the system:\*\*  
 \*\*Increase in actors with diverse interests:\*\* If new external actors with distinct agendas become involved (e.g., other gas suppliers with specific conditions), entropy would increase. \* \*\*Increased complexity of interactions:\*\* If the debt dispute escalates into legal battles or if geopolitical tensions further entangle energy supplies, entropy would increase. \* \*\*Decreased information availability or increased misinformation:\*\* If reliable information sources dry up, or if deliberate disinformation campaigns intensify, uncertainty would rise, increasing entropy. \* \*\*Increased uncertainty about the future:\*\* If the conflict in Ukraine escalates further, directly impacting gas transit, or if political instability rises within Moldova, entropy would increase. \* \*\*Increased conflicting goals or values:\*\* If internal divisions within Moldova regarding energy policy intensify, or if external pressure on Moldova increases, entropy would rise.

2. \*\*Entropy and Stability/Instability:\*\* \* \*\*Analyze the relationship between entropy and the stability or instability of the system:\*\* The current high level of entropy in Moldova's energy system directly correlates with its \*\*instability\*\*. The sudden cessation of a primary energy source creates significant disruption and uncertainty, making the system highly susceptible to further shocks and unexpected outcomes. High entropy signifies a wider range of potential, unpredictable states, making stability less likely. \* \*\*Discuss whether the current level of entropy in the system is conducive to stability or instability:\*\* The current high entropy is \*\*not conducive to stability\*\*. The immediate consequences – potential blackouts, economic disruption, and social unrest – are indicators of an unstable system. The political maneuvering and accusations further destabilize the situation. \* \*\*Identify potential "tipping points" where a change in entropy could lead to a significant shift in the system's behavior:\*\* \* \*\*Decrease in entropy:\*\* A successful agreement with alternative gas suppliers at affordable prices, coupled with a clear resolution of the debt dispute with Gazprom (or its irrelevance), would significantly reduce uncertainty and entropy, potentially leading to a more stable energy supply and reduced political tensions. \* \*\*Increase in entropy:\*\* A prolonged and severe energy crisis leading to widespread social unrest could be a tipping point towards political instability and potentially regime change. A failure to secure alternative supplies before winter sets in would drastically increase entropy and the risk of societal breakdown. A sudden escalation of regional conflict directly impacting Moldova could also dramatically increase entropy.

3. \*\*Entropy and Information:\*\* \* \*\*Explore the connection between entropy and information:\*\* The high entropy environment in Moldova's energy sector amplifies the \*\*need for accurate and timely information\*\*. Decision-makers require reliable data on gas reserves, alternative supply options, the true nature of the debt, and the political motivations of all involved parties to navigate the crisis effectively. \* \*\*Analyze how the availability, quality, and distribution of information are affecting the entropy of the system:\*\* The \*\*lack of transparent and verifiable information\*\* significantly contributes to the high entropy. The contested debt amount, the ambiguity surrounding Gazprom's long-term intentions, and the uncertainty about the reliability of alternative supply routes all stem from information deficits. Uneven access to information among different actors also contributes to the disorder, as each actor operates with potentially incomplete or biased data. \* \*\*Discuss the role

of misinformation or disinformation in increasing entropy:\*\* \*\*Misinformation and disinformation act as direct amplifiers of entropy\*\*. Russia's narrative framing the gas cut solely as a consequence of unpaid debt, while downplaying potential political motivations, creates confusion and obscures the true dynamics. Similarly, speculation and rumors regarding alternative supplies or potential political deals further muddy the waters, increasing the number of possible (and often inaccurate) interpretations of the situation.

4. \*\*Entropy and Decision-Making:\*\* \* \*\*Analyze how the level of entropy in the system affects decision-making processes:\*\* The high entropy environment makes \*\*informed decision-making exceptionally difficult for Moldova\*\*. The uncertainty surrounding future gas availability, price volatility, and the political ramifications of various choices create a complex and unpredictable landscape. Decision-makers face the challenge of acting under conditions of significant ambiguity, where the consequences of their actions are hard to predict. \* \*\*Discuss how actors within the system are attempting to manage or reduce entropy to improve decision-making:\*\* \* \*\*Information gathering:\*\* Moldova is actively seeking information on alternative gas sources, negotiating with EU partners for support, and potentially conducting audits to clarify the debt situation. \* \*\*Building consensus:\*\* The government is likely trying to build internal consensus on the best course of action, although the pressure of the crisis makes this challenging. Seeking international support also serves to build a broader consensus. \* \*\*Establishing rules and norms:\*\* While difficult in the immediate crisis, Moldova is likely trying to establish clearer agreements and contracts with alternative suppliers to create more predictable future energy flows. The pursuit of EU membership also reflects a long-term strategy to adopt and adhere to established norms.

5. \*\*Entropy and Future Trajectories:\*\* \* \*\*Discuss how the current level of entropy and its potential changes might influence the future trajectory of the system:\*\* The current high entropy suggests several potential, divergent future trajectories. If entropy remains high or increases, Moldova could face prolonged energy insecurity, economic hardship, and continued political instability, potentially leading to a shift in its geopolitical alignment or internal political landscape. If entropy can be reduced, for instance, through successful diversification and stable international partnerships, Moldova could solidify its path towards greater energy independence and closer integration with the EU. \* \*\*Identify potential scenarios that could arise from increasing or decreasing entropy:\*\* \* \*\*Increasing entropy:\*\* A severe and prolonged energy crisis leads to widespread social unrest and potentially a change in government, possibly leading to a more pro-Russian leadership seeking to restore gas supplies on Moscow's terms. Failure to secure alternative energy sources before winter could trigger a humanitarian crisis, further destabilizing the country. \* \*\*Decreasing entropy:\*\* Successful negotiation of long-term gas supply contracts with non-Russian sources and the integration of its energy grid with the EU significantly reduces reliance on Russia and fosters a more stable and predictable energy future. This would strengthen Moldova's sovereignty and its alignment with the West. A clear resolution of the debt dispute would also reduce a significant source of uncertainty. \* \*\*Analyze the long-term implications of these scenarios:\*\* A high-entropy scenario could trap Moldova in a cycle of energy dependence and political vulnerability to Russia. It could hinder its EU aspirations and lead to long-term economic stagnation. Conversely, a low-entropy scenario could pave the way for a more secure, prosperous, and sovereign Moldova, firmly integrated into the European energy market and political framework. This would have significant implications for regional geopolitics, potentially weakening Russia's influence in the area and strengthening the EU's eastern partnerships.

## 4.3 Actor Mapping Analysis

\*\*Actor Identification:\*\*

\* \*\*Gazprom:\*\* Russian state-owned energy company, the primary supplier of natural gas to Moldova historically. \*\*Important\*\* because its decision to cut supplies is the central event of the scenario. \* \*\*Moldovan Government (specifically the pro-European Party of Action and Solidarity - PAS):\*\* The democratically elected government of Moldova. \*\*Important\*\* as it is responsible for

managing the energy crisis, maintaining stability, and navigating international relations. \*

**\*\*Transnistrian Authorities:\*\*** The de facto government of the breakaway region of Transnistria. **\*\*Important\*\*** because the region is heavily reliant on Russian gas and is disproportionately affected by the supply cut. \*

**\*\*Russian Government:\*\*** The political leadership of Russia. **\*\*Important\*\*** as Gazprom's actions are likely aligned with or directed by the Russian government's political strategy. \*

**\*\*Ukrainian Government:\*\*** Neighboring country through which gas transit previously occurred. **\*\*Important\*\*** due to the expiration of the transit agreement and its role in regional energy security. \*

**\*\*European Union (EU):\*\*** Moldova's key partner in its aspirations for integration. **\*\*Important\*\*** as it provides financial and political support to Moldova and influences its energy diversification efforts. \*

**\*\*Romanian Government:\*\*** Neighboring country and key partner for Moldova in energy diversification. **\*\*Important\*\*** for providing alternative gas and electricity supplies. \*

**\*\*Moldovan Citizens:\*\*** The population of Moldova, whose daily lives and economic well-being are directly impacted by the energy crisis. **\*\*Important\*\*** as their support for the government could be affected by the crisis. \*

**\*\*Transnistrian Residents:\*\*** The population of Transnistria, who are facing severe energy shortages. **\*\*Important\*\*** as they are the most immediately affected group and their needs create humanitarian concerns. \*

**\*\*Moldovagaz:\*\*** The Moldovan gas company, majority-owned by Gazprom. **\*\*Important\*\*** as it is the direct recipient of Gazprom's gas and is involved in the debt dispute. \*

**\*\*Naftogaz:\*\*** The Ukrainian state-owned oil and gas company, formerly responsible for transit of Russian gas to Moldova. **\*\*Important\*\*** due to the non-renewal of the transit agreement. \*

**\*\*International Financial Institutions (e.g., EIB, UNDP):\*\*** Organizations providing financial and technical assistance to Moldova for energy diversification and crisis management. **\*\*Important\*\*** for their role in supporting Moldova's long-term energy security.

#### **\*\*Actor Interests and Motivations:\*\***

\* **\*\*Gazprom:\*\*** **\*\*Goals:\*\*** Enforce payment of disputed debt, exert economic and political influence over Moldova, potentially undermine Moldova's pro-EU trajectory, maintain its position as a key energy supplier in the region. **\*\*Values:\*\*** Corporate profitability, fulfilling the objectives of the Russian state. **\*\*Underlying Needs:\*\*** Maintain financial stability, project power in its near abroad. **\*\*Example:\*\*** Gazprom's consistent citing of Moldova's alleged debt as the reason for the supply cut, despite Moldova's counter-arguments and international audits, suggests a broader political motivation beyond mere debt recovery.

\* **\*\*Moldovan Government (PAS):\*\*** **\*\*Goals:\*\*** Secure reliable and affordable energy supplies for Moldova, maintain political stability, advance EU integration, resist Russian influence, win the upcoming parliamentary elections. **\*\*Values:\*\*** National sovereignty, democratic governance, European integration. **\*\*Underlying Needs:\*\*** Maintain public trust, ensure national security, foster economic development. **\*\*Example:\*\*** The Moldovan government's efforts to secure alternative gas supplies from Romania and its accusations of "energy blackmail" against Russia demonstrate its commitment to reducing dependence on Gazprom and resisting Russian pressure.

\* **\*\*Transnistrian Authorities:\*\*** **\*\*Goals:\*\*** Ensure energy security for the region, maintain social stability, potentially leverage the crisis to solicit aid from Russia, preserve the region's autonomy and ties with Russia. **\*\*Values:\*\*** Close alignment with Russia, regional stability, economic survival. **\*\*Underlying Needs:\*\*** Maintain political control, ensure the well-being of the population. **\*\*Example:\*\*** Transnistria's appeals to Russia for "humanitarian aid" gas supplies highlight its reliance on Russia and its interest in maintaining that relationship during the crisis.

\* **\*\*Russian Government:\*\*** **\*\*Goals:\*\*** Weaken the pro-Western government in Moldova, exert control over its near abroad, counter EU influence, potentially destabilize Moldova to prevent further westward integration. **\*\*Values:\*\*** Geopolitical influence, control over former Soviet states, opposition to Western expansion. **\*\*Underlying Needs:\*\*** Maintain regional hegemony, project power. **\*\*Example:\*\*** The timing of the gas cut, coinciding with the expiration of the Ukraine transit agreement and ahead of Moldovan elections, suggests a strategic political motive.

\* **\*\*Ukrainian Government:\*\*** **\*\*Goals:\*\*** Strengthen its own energy security, reduce reliance on Russia, support Moldova against Russian aggression, integrate further with the EU. **\*\*Values:\*\***



National sovereignty, territorial integrity, European integration. \* \*\*Underlying Needs:\*\* Ensure its own energy supply, maintain international support in its conflict with Russia. \* \*\*Example:\*\* Ukraine's decision not to renew the gas transit agreement with Russia, while contributing to Moldova's crisis, aligns with its broader strategy to decouple from Russian energy dependence.

\* \*\*European Union (EU):\*\* \* \*\*Goals:\*\* Support Moldova's energy security and EU integration, counter Russian influence in the region, promote diversification of energy supplies within Europe. \* \*\*Values:\*\* Democracy, rule of law, energy security, regional stability. \* \*\*Underlying Needs:\*\* Maintain stability in its neighborhood, ensure energy security for member states. \* \*\*Example:\*\* The EU's financial and political support for Moldova's energy diversification efforts demonstrates its commitment to helping Moldova reduce its dependence on Russia.

\* \*\*Romanian Government:\*\* \* \*\*Goals:\*\* Strengthen bilateral ties with Moldova, expand its regional influence, potentially benefit economically from providing energy to Moldova, support Moldova's EU aspirations. \* \*\*Values:\*\* Regional cooperation, solidarity with Moldova, economic opportunity. \* \*\*Underlying Needs:\*\* Maintain good relations with neighbors, enhance its regional role. \* \*\*Example:\*\* Romania's provision of gas and electricity to Moldova highlights its commitment to assisting Moldova during the crisis and strengthening their strategic partnership.

\* \*\*Moldovan Citizens:\*\* \* \*\*Goals:\*\* Access to affordable and reliable energy, economic stability, political stability, a better future for their country. \* \*\*Values:\*\* Economic well-being, security, national identity. \* \*\*Underlying Needs:\*\* Basic necessities, a stable and prosperous environment. \* \*\*Example:\*\* Public concern over rising energy prices and potential blackouts reflects the citizens' direct stake in the resolution of the energy crisis.

\* \*\*Transnistrian Residents:\*\* \* \*\*Goals:\*\* Access to heating, electricity, and water, economic survival, stability in the region. \* \*\*Values:\*\* Basic necessities, security, close ties with Russia. \* \*\*Underlying Needs:\*\* Survival, basic living standards. \* \*\*Example:\*\* Reports of widespread blackouts and lack of heating demonstrate the immediate and severe impact of the gas cut on the daily lives of Transnistrian residents.

\* \*\*Moldovagaz:\*\* \* \*\*Goals:\*\* Navigate the debt dispute with Gazprom, ensure continued gas supply if possible, maintain its operational viability. \* \*\*Values:\*\* Corporate survival, fulfilling contractual obligations (where possible). \* \*\*Underlying Needs:\*\* Financial stability, continued operation. \* \*\*Example:\*\* Moldovagaz is caught between its majority owner (Gazprom) and the Moldovan government, facing pressure from both sides regarding the debt and gas supply.

\* \*\*Naftogaz:\*\* \* \*\*Goals:\*\* Focus on its own energy security and transit needs, maintain its stance against Russia, comply with international sanctions and regulations. \* \*\*Values:\*\* National interest, corporate responsibility, energy independence. \* \*\*Underlying Needs:\*\* Financial stability, operational continuity in a challenging geopolitical context. \* \*\*Example:\*\* Naftogaz's decision not to renew the transit agreement is a reflection of Ukraine's broader strategic shift away from reliance on Russia.

\* \*\*International Financial Institutions (e.g., EIB, UNDP):\*\* \* \*\*Goals:\*\* Promote sustainable development, support Moldova's economic stability and green transition, facilitate infrastructure development. \* \*\*Values:\*\* Sustainable development, economic growth, international cooperation. \* \*\*Underlying Needs:\*\* Fulfill their mandates, contribute to regional stability. \* \*\*Example:\*\* The EIB's provision of loans and grants for energy infrastructure projects in Moldova directly supports the country's efforts to diversify its energy sources.

**\*\*Actor Power and Influence:\*\***

\* \*\*Gazprom:\*\* \* \*\*Economic Power:\*\* Very high, historically controlled the vast majority of Moldova's gas supply. Holds significant financial leverage due to the debt dispute. \* \*\*Political Power:\*\* High, wields significant influence over Moldova due to its energy dominance and ties to Russian political leadership. \* \*\*Informational Power:\*\* Moderate, can influence narratives

surrounding the debt and supply issues. \* \*\*Example:\*\* Gazprom's ability to unilaterally cut off gas supplies demonstrates its immense economic and political power over Moldova.

\* \*\*Moldovan Government (PAS):\*\* \* \*\*Political Power:\*\* Moderate to high domestically, as the elected government. However, limited leverage against Gazprom's economic power. \* \*\*Informational Power:\*\* Moderate, can shape the narrative within Moldova and internationally, but faces challenges from Russian propaganda. \* \*\*Social Power:\*\* Moderate, relies on public support which can be affected by the energy crisis. \* \*\*Example:\*\* The government's ability to declare a state of emergency and seek international assistance demonstrates its formal political power, but its reliance on external support highlights its limitations.

\* \*\*Transnistrian Authorities:\*\* \* \*\*Political Power:\*\* High within Transnistria due to de facto control, but reliant on external support, primarily from Russia. \* \*\*Economic Power:\*\* Low, heavily dependent on subsidized Russian gas. \* \*\*Example:\*\* The Transnistrian authorities' appeal to Russia for humanitarian aid shows their dependence and limited independent power.

\* \*\*Russian Government:\*\* \* \*\*Political Power:\*\* Very high, significant regional influence and ability to exert pressure on neighboring countries. \* \*\*Economic Power:\*\* High, controls vast energy resources. \* \*\*Military Power:\*\* High, a major factor in the region. \* \*\*Informational Power:\*\* High, utilizes propaganda to shape narratives. \* \*\*Example:\*\* The Russian government's likely coordination with Gazprom's actions underscores its significant political and economic power in the region.

\* \*\*Ukrainian Government:\*\* \* \*\*Political Power:\*\* High regionally, particularly with Western allies. \* \*\*Geopolitical Power:\*\* Significant due to its strategic location and ongoing conflict with Russia. \* \*\*Example:\*\* Ukraine's refusal to extend the gas transit agreement, though impacting Moldova, reflects its sovereign decision-making power.

\* \*\*European Union (EU):\*\* \* \*\*Economic Power:\*\* Very high, significant financial resources and influence over trade and investment. \* \*\*Political Power:\*\* High, exerts soft power and influence through diplomatic channels and financial aid. \* \*\*Example:\*\* The EU's financial and political support is crucial for Moldova's energy diversification efforts and its ability to withstand Russian pressure.

\* \*\*Romanian Government:\*\* \* \*\*Political Power:\*\* Moderate regionally, strong bilateral ties with Moldova. \* \*\*Economic Power:\*\* Moderate, can provide crucial energy resources. \* \*\*Example:\*\* Romania's role as a key supplier of alternative gas and electricity demonstrates its significant influence in mitigating Moldova's energy crisis.

\* \*\*Moldovan Citizens:\*\* \* \*\*Social Power:\*\* Moderate, public opinion and potential protests can influence the government. \* \*\*Political Power:\*\* Indirect, through voting and civic engagement. \* \*\*Example:\*\* Public dissatisfaction with rising energy prices and potential shortages can put pressure on the government.

\* \*\*Transnistrian Residents:\*\* \* \*\*Social Power:\*\* Limited, but severe hardship can lead to unrest. \* \*\*Political Power:\*\* Very limited in the broader context. \* \*\*Example:\*\* The vulnerability of Transnistrian residents highlights their lack of power in the face of the energy crisis.

\* \*\*Moldovagaz:\*\* \* \*\*Economic Power:\*\* Moderate, manages the gas distribution network in Moldova. \* \*\*Political Power:\*\* Limited, caught between Gazprom and the Moldovan government. \* \*\*Example:\*\* Moldovagaz's role in the debt dispute highlights its position as a key intermediary but with limited independent power.

\* \*\*Naftogaz:\*\* \* \*\*Economic Power:\*\* High within Ukraine's energy sector. \* \*\*Political Power:\*\* Moderate, influences Ukrainian energy policy. \* \*\*Example:\*\* Naftogaz's decision regarding the transit agreement reflects its operational and strategic power within Ukraine.

\* \*\*International Financial Institutions (e.g., EIB, UNDP):\*\* \* \*\*Economic Power:\*\* Moderate to high, provide significant funding and technical expertise. \* \*\*Political Power:\*\* Soft power, influence through recommendations and conditions attached to funding. \* \*\*Example:\*\* The financial support provided by these institutions empowers Moldova to pursue long-term energy solutions.

#### \*\*Actor Relationships:\*\*

\* \*\*Gazprom - Moldovan Government (PAS):\*\* Highly adversarial and distrustful. Gazprom uses economic leverage to pressure the government, while the government seeks to reduce dependence. \* \*\*Gazprom - Moldovagaz:\*\* Complex, as Gazprom is the majority owner but Moldovagaz operates within Moldova's jurisdiction. Currently strained due to the debt dispute. \* \*\*Russian Government - Moldovan Government (PAS):\*\* Antagonistic. Russia views the pro-EU government as a threat and uses energy as a tool of coercion. \* \*\*Russian Government - Transnistrian Authorities:\*\* Strong alliance and dependency. Russia provides political, economic, and security support to Transnistria. \* \*\*Moldovan Government (PAS) - EU:\*\* Strong and cooperative. The EU provides financial and political support for Moldova's reforms and energy security. \* \*\*Moldovan Government (PAS) - Romanian Government:\*\* Close and strategic partnership, particularly in energy. Romania is a key ally in diversifying energy supplies. \* \*\*Moldovan Government (PAS) - Ukrainian Government:\*\* Generally cooperative, though the expiration of the transit agreement created challenges. Both share a desire to reduce Russian influence. \* \*\*Transnistrian Authorities - Moldovan Government (PAS):\*\* Highly strained and conflictual, with no formal diplomatic relations. The energy crisis exacerbates these tensions. \* \*\*Moldovan Citizens - Moldovan Government (PAS):\*\* Relationship of accountability. Citizens' support can be affected by the government's handling of the crisis. \* \*\*Transnistrian Residents - Transnistrian Authorities:\*\* Relationship of dependence. Residents rely on the authorities for basic services, which are now severely impacted. \* \*\*Naftogaz - Gazprom:\*\* Highly adversarial due to the ongoing conflict and energy disputes. \* \*\*EU - Russian Government:\*\* Increasingly strained, particularly due to the war in Ukraine and Russia's use of energy as a weapon. \* \*\*International Financial Institutions - Moldovan Government:\*\* Cooperative, providing financial and technical assistance for development projects.

#### \*\*Potential Interactions and Coalitions:\*\*

\* \*\*Increased Cooperation between Moldova, Romania, and the EU:\*\* The energy crisis is likely to strengthen their existing coalition, with increased financial and technical assistance from the EU and Romania playing a crucial role in providing alternative energy sources and infrastructure. \* \*\*Potential for Increased Russian Support for Transnistria:\*\* Faced with a severe energy crisis, Transnistria is likely to seek increased aid from Russia, potentially including direct gas supplies or financial assistance. This could further entrench Russian influence in the region. \* \*\*Risk of Political Instability in Moldova:\*\* The energy crisis could be exploited by pro-Russian opposition parties within Moldova, potentially leading to social unrest and pressure on the current government. Russia might seek to support these forces to destabilize the country. \* \*\*Continued Efforts for Energy Diversification:\*\* The crisis will likely accelerate Moldova's efforts to diversify its energy sources, seeking further integration with the European energy market and investing in renewable energy. \* \*\*Potential for Humanitarian Crisis in Transnistria:\*\* If the energy crisis persists and intensifies, there is a risk of a humanitarian crisis in Transnistria, requiring international intervention and potentially increasing tensions with Moldova. \* \*\*Possible Mediation Efforts:\*\* International actors, such as the EU or OSCE, might attempt to mediate between Moldova and Gazprom or Russia to find a temporary solution to the gas supply issue, although the prospects for success are currently low due to the deep political divisions. \* \*\*Formation of an Anti-Gazprom/Russia Coalition:\*\* Moldova, Ukraine, and potentially other countries reliant on Russian gas might strengthen their cooperation to find alternative suppliers and push for stronger sanctions against Russia's energy sector. \* \*\*Exploitation of the Crisis by Other Actors:\*\* Other energy suppliers or countries with geopolitical interests in the region might seek to capitalize on the situation by offering alternative energy supplies or political support, potentially shifting the balance of power.

## 4.4 Game Theory Analysis

### **\*\*Key Players:\*\***

\* **Gazprom:** As the primary actor initiating the gas supply cut, Gazprom's strategic choices are central to the unfolding situation. Their actions directly impact Moldova's energy security and political stability. \* **Moldovan Government (specifically the pro-European Party of Action and Solidarity - PAS):** The governing body in Moldova is the primary respondent to Gazprom's actions. Their strategies to secure alternative supplies, manage the crisis, and maintain political stability are crucial. \* **European Union (EU):** The EU is a key external actor providing financial and political support to Moldova. Their strategic decisions on aid and diplomatic pressure significantly influence Moldova's options and Gazprom's calculations.

### **\*\*Justification:\*\***

These players are selected because their interactions are the most pivotal in determining the immediate and near-term consequences of Gazprom's decision. Gazprom's unilateral action sets the stage, the Moldovan government reacts to mitigate the impact, and the EU plays a significant role in supporting Moldova's response and influencing the broader geopolitical context. While other actors are important, these three are the core decision-makers in this specific strategic interaction.

### **\*\*Define Actions:\*\***

#### **\*\*Gazprom:\*\***

\* **A) Maintain Supply Cut:** Continue the complete cessation of gas deliveries to Moldova, citing the disputed debt. \* **B) Offer Conditional Resumption:** Propose a limited resumption of gas supplies, contingent on Moldova making certain concessions (e.g., partial debt payment, policy changes). \* **C) Demand Immediate Payment:** Insist on full and immediate payment of the disputed \$709 million debt as a precondition for any supply resumption.

#### **\*\*Moldovan Government (PAS):\*\***

\* **A) Aggressively Pursue Alternatives:** Focus entirely on securing alternative gas supplies from Romania and other sources, even at higher costs, and refuse direct negotiations with Gazprom on its terms. \* **B) Engage in Limited Negotiations:** Open channels for discussion with Gazprom, exploring potential compromises on the debt or future supply agreements, while simultaneously pursuing alternative supplies. \* **C) Appeal for Increased EU Assistance:** Primarily rely on seeking greater financial and logistical support from the EU to manage the crisis and secure energy supplies.

#### **\*\*European Union (EU):\*\***

\* **A) Provide Substantial Financial and Logistical Aid:** Offer significant financial assistance to help Moldova purchase alternative energy and logistical support to facilitate imports. \* **B) Exert Diplomatic Pressure on Russia:** Condemn Gazprom's actions, impose or threaten further sanctions on Russia, and engage in diplomatic efforts to pressure Russia to resume supplies. \* **C) Offer Limited Support and Encourage Negotiation:** Provide some financial aid but primarily encourage Moldova to negotiate directly with Gazprom to find a resolution.

### **\*\*Construct Payoff Matrix/Matrices:\*\***

Given the three players, a series of 2x2 matrices representing the choices of two players while holding the third player's action constant is more manageable than a single 3D matrix.

#### **\*\*Matrix 1: Gazprom vs. Moldovan Government (EU provides Substantial Aid)\*\***

	Moldovan Govt: Pursue Alternatives	Moldovan Govt: Negotiate	Moldovan Govt: Appeal for EU Aid
Gazprom: Maintain Cut	(Low, Medium)	(Medium, Low)	(Low, Medium)
Gazprom: Conditional Resume	(Low, High)	(High, Medium)	(Low, High)
Gazprom: Demand Payment	(Low, Low)	(Medium, Low)	(Low, Low)

**Reasoning:** **Gazprom:** Maintaining the cut when Moldova aggressively pursues alternatives yields a low payoff (loss of revenue, potential long-term loss of market share). Conditional resumption can be high if concessions are met. Demanding payment with aggressive alternatives leaves Gazprom with little leverage. **Moldovan Government:** Pursuing alternatives with substantial EU aid yields a medium payoff (energy security but higher costs). Negotiating could be low (potential concessions) or medium (favorable compromise). Relying solely on EU aid might be insufficient (medium).

**Matrix 2: Gazprom vs. Moldovan Government (EU Exerts Diplomatic Pressure)**

	Moldovan Govt: Pursue Alternatives	Moldovan Govt: Negotiate	Moldovan Govt: Appeal for EU Aid
Gazprom: Maintain Cut	(Low, Medium)	(Medium, Low)	(Low, Medium)
Gazprom: Conditional Resume	(Medium, High)	(High, Medium)	(Medium, High)
Gazprom: Demand Payment	(Low, Low)	(Medium, Low)	(Low, Low)

**Reasoning:** Similar to Matrix 1, but EU diplomatic pressure adds a cost to Gazprom's aggressive actions, making conditional resumption relatively more attractive.

**Matrix 3: Gazprom vs. Moldovan Government (EU Offers Limited Support)**

	Moldovan Govt: Pursue Alternatives	Moldovan Govt: Negotiate	Moldovan Govt: Appeal for EU Aid
Gazprom: Maintain Cut	(Medium, Low)	(High, Medium)	(Medium, Low)
Gazprom: Conditional Resume	(Low, Medium)	(Medium, Medium)	(Low, Medium)
Gazprom: Demand Payment	(Medium, Low)	(High, Low)	(Medium, Low)

**Reasoning:** With limited EU support, Moldova's ability to pursue alternatives is weakened, making negotiation more appealing for Gazprom, and maintaining the cut less costly as Moldova has fewer options.

**Payoff Explanation (Qualitative):**

**High:** Significant gains in achieving strategic goals (e.g., securing energy supply for Moldova, exerting political influence for Gazprom, strengthening partnerships for the EU). **Medium:** Moderate success or a neutral outcome where goals are partially met or costs are balanced by benefits. **Low:** Significant losses or failure to achieve strategic goals, potentially incurring significant costs or damage.

**Analyze Equilibria:**

Identifying pure strategy Nash Equilibria across these matrices requires examining each cell and determining if any player has an incentive to unilaterally deviate.

**Matrix 1 (Substantial EU Aid):** A potential Nash Equilibrium exists where Gazprom chooses **Conditional Resumption** and the Moldovan Government chooses to **Negotiate**. Gazprom benefits from potential concessions, and Moldova secures some gas supply with EU backing. However, if the Moldovan government strongly pursues alternatives, Gazprom's conditional resumption becomes less attractive. **Matrix 2 (EU Diplomatic Pressure):** Similar to Matrix 1, a potential Nash Equilibrium exists with **Conditional Resumption** by Gazprom and **Negotiation** by Moldova. The added pressure on Gazprom reinforces this outcome. **Matrix 3 (Limited EU**

Support):\*\* A potential Nash Equilibrium shifts towards Gazprom choosing to **Maintain Cut** or **Demand Payment**, and the Moldovan Government being forced to **Negotiate** due to a lack of viable alternatives.

These are **pure strategy Nash Equilibria**. The specific equilibrium reached is heavily influenced by the EU's actions.

**Consider Game Dynamics:**

**Sequential vs. Simultaneous Moves:** The initial decision by Gazprom to cut supplies is a sequential move, setting the stage for the Moldovan government and EU's simultaneous responses. However, subsequent interactions (negotiations, aid offers) can be viewed as simultaneous or sequential depending on the specific timeframe. **Repeated Interactions:** This is a repeated game. Moldova and Russia (through Gazprom) have a long history of energy dependence and disputes. The anticipation of future interactions influences current behavior. Moldova's efforts to diversify are a direct response to the risks of repeated reliance on Gazprom. **Incomplete Information:** There is incomplete information, particularly regarding the true costs and benefits for each player and the extent of each other's resolve. Gazprom might not know the exact cost Moldova is willing to bear for alternative supplies, and Moldova might not know Gazprom's bottom line for resuming supplies. **External Factors:** The Russia-Ukraine war is a major external factor significantly influencing the dynamics. EU energy policy, global energy prices, and internal political pressures within Moldova also play a role.

**Discuss Implications:**

**Likely Behavior:** The likely behavior of the key players depends heavily on the perceived level of EU support. If the EU provides substantial aid and exerts strong diplomatic pressure, the Moldovan government is more likely to aggressively pursue alternatives and negotiate from a position of relative strength. Gazprom, facing external pressure and potential loss of market share, might be more inclined towards a conditional resumption of supply. If EU support is limited, Moldova might be forced into a weaker negotiating position, and Gazprom is more likely to maintain the cut or demand immediate payment. **Potential Outcomes:** **Strong EU Support:** Moldova might successfully navigate the crisis by securing alternative supplies, albeit potentially at a higher cost, and reduce its dependence on Gazprom in the long term. Gazprom might suffer reputational damage and lose market share. **Limited EU Support:** Moldova faces a difficult winter with potential energy shortages and economic hardship. The government's popularity could suffer, potentially leading to political instability. Gazprom maintains its leverage. **Connection to Broader Context:** The analysis aligns with the information provided, showing how Gazprom uses energy as a political weapon and how Moldova is striving for energy independence with EU support. The precarious situation in Transnistria highlights the humanitarian consequences of this strategic game. **Potential Leverage Points:** **EU Financial and Logistical Support:** Providing significant and timely aid empowers Moldova and changes the payoff structure for all players. **Coordinated International Pressure on Russia:** A united front from the EU and other international actors can increase the cost for Gazprom (and Russia) of maintaining the supply cut. **Investing in Long-Term Energy Infrastructure in Moldova:** Building robust alternative supply routes and increasing renewable energy capacity fundamentally alters the game by reducing Moldova's vulnerability. **Resolving the Debt Dispute through Independent Arbitration:** A fair and transparent resolution of the debt issue could remove a key pretext for Gazprom's actions, although political motivations likely run deeper.

## Annex: News and Current Events

This section contains relevant news articles and current events related to the analysis.

## **\*\*Impact of Gazprom Gas Cuts on Moldova Economy\*\***

### **\*\*Key Points:\*\***

1. **\*\*Immediate Impact\*\***: On January 1, 2025, Gazprom ceased natural gas deliveries to Moldova, significantly affecting the country's energy supply. The breakaway Transnistrian region was left without gas, leading to widespread blackouts and the shutdown of industrial production[1][2].
2. **\*\*Economic Consequences\*\***: The gas cutoff has caused rising prices for light and heat in Moldova, with severe supply challenges and potential humanitarian crises, especially in Transnistria[1][3].
3. **\*\*Political Context\*\***: The move is part of Russia's broader strategy to exert pressure on Moldova, aiming to install a pro-Russian government and counter Western influence. This includes using energy as a weapon, a tactic that has been employed since 2021[1][5].
4. **\*\*Alternative Supplies\*\***: Moldova has been exploring alternative energy sources, including a gas pipeline from Romania and electricity imports. However, these alternatives are more expensive and insufficient to meet the country's demand[1][2].
5. **\*\*Transnistrian Crisis\*\***: Transnistria, heavily dependent on Russian gas, has been severely impacted, with daily blackouts and the closure of industrial activities. The region has appealed to Russia for assistance, and there are reports of "humanitarian aid" gas supplies being reinstated[3][4].
6. **\*\*Long-term Implications\*\***: The crisis may accelerate Moldova's efforts to diversify its energy sources and align more closely with the EU. Despite potential short-term gains for Russia, the long-term consequences could include further erosion of Russian influence in the region[1][2].

### **\*\*Key Dates:\*\***

- **\*\*January 1, 2025\*\***: Gazprom halted gas supplies to Moldova, citing alleged debts and the expiration of the transit agreement through Ukraine.
- **\*\*2021\*\***: Russia began intensifying its use of energy as a weapon against Moldova, raising prices and reducing gas supplies.
- **\*\*2022\*\***: Moldova obtained EU candidate status and began efforts to reduce its energy dependence on Russia.
- **\*\*2024\*\***: Ukraine announced it would not renew the gas transit agreement with Russia, leading to the current crisis.

### **\*\*Sources:\*\***

1. **\*\*Wilson Center\*\***: "Russia's Energy Cutoff of Moldova: Crisis or Opportunity" (January 7, 2025)
2. **\*\*Free Policy Briefs\*\***: "Costs and Benefits of Shutting Down Europe's Last Gas Pipeline" (January 12, 2025)
3. **\*\*Euronews\*\***: "Russia to supply 'humanitarian aid' gas to Transnistria, Tiraspol says" (January 15, 2025)
4. **\*\*The Moscow Times\*\***: "Transnistria Appeals to Russia Amid Worsening Energy Crisis" (January 10, 2025)
5. **\*\*Intellinews\*\***: "Russia cuts gas deliveries to Moldova in attempt to undermine political stability" (January 1, 2025)

## **\*\*Brief Report: Moldova Energy Crisis and Political Implications\*\***

### **\*\*Key Facts:\*\***

1. **\*\*Gazprom Halts Gas Deliveries:\*\*** On January 1, 2025, Gazprom ceased natural gas deliveries to Moldova, including the breakaway region of Transnistria, due to the expiration of Russia's contract with Ukraine for gas transit to Europe[2][4].

2. **Energy Crisis Impact:** The halt in gas deliveries has caused an energy crisis in Transnistria, which heavily relies on Russian gas for heating and industry. Moldova, although diversified in its gas supply, is also affected due to its reliance on a gas-fueled power station in Transnistria for approximately two-thirds of its electricity[4].

3. **Political Implications:** The energy crisis is expected to have a strong negative effect on Moldova's ruling pro-European Party of Action and Solidarity (PAS) in parliamentary elections due in the second half of 2025. The crisis may also strain relations between Moldova and Russia, with Moldova accusing Moscow of "energy blackmail"[2][5].

4. **Transnistria's Vulnerability:** Transnistria, a pro-Russian breakaway region, is particularly vulnerable to the energy crisis, with 72,000 private households lacking gas and 1,500 apartment buildings without heating or water[4].

5. **International Reactions:** Ukraine has accused Moscow of fomenting the crisis in Moldova, while Russia blames Kyiv and Chișinău for the crisis. The Russian Embassy in Moldova claims the crisis was caused by the Chișinău government's failure to address issues with Gazprom and Ukraine's refusal to extend the gas transit agreement[5].

#### **Causal Relationships:**

- **Gazprom's Action:** The halt in gas deliveries by Gazprom is directly linked to the energy crisis in Moldova and Transnistria.
- **Political Tensions:** The energy crisis is likely to exacerbate political tensions between Moldova and Russia, as well as within Moldova, particularly affecting the ruling PAS party.
- **Economic Impact:** The crisis has led to utility price hikes in Moldova, as the country has had to switch to buying more expensive electricity from neighboring Romania.

#### **Main Consequences:**

- **Energy Crisis:** The immediate consequence is a severe energy crisis in Transnistria and broader impacts on Moldova's energy supply.
- **Political Fallout:** The crisis is expected to have significant political implications for Moldova's ruling party and may strain international relations.
- **Economic Strain:** The crisis has led to economic strain, particularly in Transnistria, with widespread disruptions to heating and industry.

#### **Recommendations:**

- **Diversification of Energy Sources:** Moldova and Transnistria should further diversify their energy sources to reduce dependence on Russian gas.
- **International Cooperation:** Enhanced international cooperation, particularly between Moldova, Ukraine, and the European Union, could help mitigate the crisis and prevent future disruptions.
- **Political Dialogue:** Political dialogue between Moldova and Russia, as well as within Moldova, is crucial to address the underlying issues and prevent further escalation.

#### **Brief Report: Recent Developments in Gazprom's Gas Supply to Moldova**

#### **Key Points:**

1. **Suspension of Gas Exports:** Gazprom, the Russian state-owned energy giant, has suspended gas exports to Moldova from January 1, 2025, citing unpaid debts by Moldova[2][4].
2. **Capacity Booking:** Gazprom did not book any capacity in the Trans-Balkan gas pipeline route for January 2025, indicating no plans to use this route for deliveries to Transnistria[1].



3. **Energy Crisis:** Moldova has declared a state of emergency due to the potential disruption of gas supplies, which could lead to power shortages and extensive blackouts in both Moldova and Transnistria[2][4].
4. **Debt Dispute:** Gazprom calculates the debt at \$709 million, while Moldova disputes this, claiming the debt is only \$8.6 million[2][3].
5. **Alternative Supply Routes:** Discussions on alternative gas supply routes, such as the Trans-Balkan or TurkStream pipelines, have not led to any agreements due to the debt dispute and Ukraine's refusal to extend the gas transit contract[1][3].
6. **Impact on Transnistria:** The cessation of Russian gas supplies could cause the power-generating plant in Transnistria to cease operations, leading to significant energy shortages and economic challenges for the region[2][3].
7. **Moldova's Preparedness:** Moldova has diversified its gas sources and completed gas purchases for the winter season, but the country remains vulnerable to energy shortages and political instability[1][4].

**Timeline:**

- **December 13, 2024:** Moldova declares a state of emergency over energy concerns[4].
- **December 17, 2024:** Moldova's energy ministry announces that Gazprom did not book any capacity in the Trans-Balkan gas pipeline for January 2025[1].
- **December 30, 2024:** Gazprom announces the suspension of gas exports to Moldova from January 1, 2025[2].
- **January 1, 2025:** The Russia-Ukraine gas transit deal expires, leading to the cessation of Russian gas supplies to Moldova via Ukraine[2][4].

**Consequences:**

- **Energy Shortages:** The suspension of gas exports could lead to significant energy shortages and power cuts in Moldova and Transnistria.
- **Political Instability:** The energy crisis could exacerbate political instability in Moldova, particularly with parliamentary elections approaching.
- **Economic Challenges:** The cessation of Russian gas supplies could have severe economic implications for Transnistria, which relies heavily on cheap Russian gas for its economy.

**Causal Relationships:**

- The expiration of the Russia-Ukraine gas transit deal and Gazprom's decision to suspend gas exports to Moldova have directly caused the current energy crisis.
- The debt dispute between Gazprom and Moldova has hindered negotiations on alternative gas supply routes.
- The reliance of Transnistria on cheap Russian gas has made the region particularly vulnerable to the cessation of these supplies.

**Brief Report: Alternative Energy Sources in Moldova Following Gazprom Cuts**

**Key Facts and Dates:**

1. **Gazprom Cuts and Energy Crisis:**

- **Date:** Late 2024
- **Event:** Gazprom stopped gas deliveries to the Transnistrian region, significantly impacting Moldova's electricity supply, particularly from the Cuciurgan power station[3][5].

2. **Moldova's Response:**

- - **Date:** January 2025
- - **Action:** The Moldovan government is working to ensure an uninterrupted electricity supply by leveraging domestic and imported sources. This includes utilizing combined heat and power plants, importing electricity from Romania, and increasing renewable energy capacity[3][5].
- 3. **Renewable Energy Initiatives:**
- - **Date:** Starting 2025
- - **Initiative:** The Republic of Moldova, with support from Sweden, Norway, and UNDP, will test its first energy communities with renewable energy sources. These communities aim to reduce bills, create new jobs, reduce the carbon footprint, and enhance energy resilience[1][4].
- 4. **Renewable Energy Capacity:**
- - **Date:** January 1, 2025
- - **Update:** Moldova's renewable energy capacity has increased from 521 MW in October 2024 to over 600 MW, with plans for further expansion[3].
- 5. **Import and Domestic Production:**
- - **Date:** January 2025
- - **Strategy:** Moldova plans to cover its electricity needs through a combination of domestic production, imports from Romania, and leveraging unreserved capacity on other borders within the Moldova-Ukraine control block[3].

**Consequences and Causal Relationships:**

- **Gazprom Cuts:** The cessation of Russian gas supplies to the Transnistrian region has necessitated Moldova to diversify its energy sources.
- **Renewable Energy Expansion:** The introduction of energy communities with renewable energy sources is a direct response to the need for sustainable and reliable energy solutions.
- **Import and Domestic Production:** The combination of domestic production and imports from neighboring countries is crucial for ensuring an uninterrupted electricity supply.
- Conclusion:** Moldova is actively addressing the energy crisis caused by Gazprom's cuts by diversifying its energy sources, increasing renewable energy capacity, and leveraging imports. The introduction of energy communities with renewable energy sources, supported by international partners, marks a significant step towards a greener and more sustainable future.

**Geopolitical Implications of Gazprom-Moldova Gas Dispute**

**Key Facts and Dates:**

1. **December 28, 2024:** Gazprom announced it would halt natural gas deliveries to Moldova's Moldovagaz starting on January 1, 2025, due to outstanding gas debts and payment issues[1].
2. **January 1, 2025:** The five-year natural gas transit contract between Russia's Gazprom and Ukraine's Naftogaz expired, ending Russian gas transit through Ukraine[2].
3. **December 16, 2024:** Moldova declared a 60-day state of emergency due to energy security concerns[1].
4. **January 15, 2025:** The Moscow-backed leader of Transnistria stated that Russia would send "humanitarian" gas supplies to the region[3].

**Main Consequences and Causal Relationships:**

- **Energy Crisis in Moldova:** The halt in gas supplies from Gazprom has led to an energy crisis in Moldova, particularly affecting the breakaway region of Transnistria, which relies heavily on Russian gas for electricity generation[1][2].
- **Political Instability:** The energy crisis has exacerbated political instability in Moldova, with both the official government in Chişinău and the Transnistrian government declaring states of emergency and implementing energy-saving measures[2].
- **Regional Tensions:** The dispute has heightened regional tensions, with Russia blaming Moldova and Ukraine for the crisis, while the EU and Moldova accuse Russia of using the debt

issue as a pretext to exert leverage over Moldova[3].

- **Humanitarian Concerns:** The situation in Transnistria has raised humanitarian concerns, with the region facing major power cuts and lacking an alternative source of gas[2][3].

**Key Data Points:**

- **Gas Demand:** Moldova's gas demand is split between the Republic of Moldova (1.2 Bcm/year) and Transnistria (2.1 Bcm/year)[1].

- **Supply Route:** Gazprom supplied 5.7 million cu m/d of gas via Ukraine, which was redirected for consumption to Transnistria[1].

- **Debt Dispute:** Gazprom claims Moldovagaz owes \$709 million in historical gas debts, a figure disputed by Moldova's energy ministry[1].

**Conclusion:**

The Gazprom-Moldova gas dispute has significant geopolitical implications, including an energy crisis in Moldova, political instability, and heightened regional tensions. The situation underscores the need for Moldova to diversify its energy sources and reduce its reliance on Russian gas to mitigate future energy crises. The international community, particularly the EU, must work with Moldova to address the current humanitarian concerns and support long-term energy sector reforms.

**Brief Report: Social Impact of Gas Shortages in Moldova**

**Key Facts and Dates:**

1. **Gas Supply Halt:** Russia's state-owned Gazprom halted gas supplies to Moldova on January 1, 2025, due to a disputed \$709 million debt and the expiration of a supply contract with Ukraine[1][3]. 2. **Immediate Impact:** Thousands of households in Moldova's breakaway region of Transnistria have been left without gas, heating, and hot water, leading to severe shortages and humanitarian concerns[3][5]. 3. **Economic Consequences:** The lack of Russian gas has forced almost all industrial activity in Transnistria to halt, except for food production, affecting strategic companies like Moldova Steel Works JSC[5]. 4. **Government Response:** Moldova's Prime Minister Dorin Recean has accused Russia of using energy as a political weapon to destabilize Moldova and undermine its EU aspirations. The government has implemented energy-saving measures and assured sufficient gas supplies for the heating season, but warned of serious humanitarian implications in Transnistria[1][5]. 5. **Humanitarian Concerns:** Residents are expected to travel to Moldova for basic necessities, leading to potential influxes of people crossing the border. The situation could exacerbate tensions between Chisinau and Tiraspol, Transnistria's de facto capital[1][3].

**Main Consequences:**

- **Humanitarian Crisis:** The gas shortages have led to a humanitarian crisis in Transnistria, with residents facing severe shortages of heating and hot water.

- **Economic Disruption:** The halt in industrial activity could have long-term economic implications for the region.

- **Political Tensions:** The situation could amplify political and social pressures in Moldova ahead of the 2025 parliamentary elections.

**Causal Relationships:**

- The halt in Russian gas supplies is directly linked to the disputed debt and the expiration of the supply contract with Ukraine.

- The lack of gas has caused severe shortages and humanitarian concerns in Transnistria.

- The situation is perceived by Moldova's government as a security crisis aimed at enabling the return of pro-Russian forces to power in Moldova and weaponizing its territory against Ukraine.

## **\*\*Recommendations:\*\***

- Immediate international assistance is needed to address the humanitarian crisis in Transnistria.
- Diplomatic efforts should be made to resolve the energy dispute and ensure a stable gas supply.
- Moldova should continue to diversify its energy sources to reduce dependence on Russian gas.

**\*\*Detailed Analysis of Gazprom's Strategic Behavior in Gas Supply Disputes with European Countries, Focusing on Moldova\*\***

## **\*\*Key Points:\*\***

1. **\*\*Termination of Gas Transit via Ukraine\*\***: As of January 1, 2025, Ukraine halted the transit of Russian gas to Europe, marking the end of a five-year agreement between Russian Gazprom and Ukrainian Naftogaz. This decision significantly impacts Europe's energy landscape and has particular consequences for Moldova[1][2].

2. **\*\*Impact on Moldova\*\***: Moldova faces severe supply challenges due to the halt in Russian gas transit. The pro-Russian separatist region of Transnistria, which was fully reliant on subsidized Russian gas via Ukraine, has been cut off since January 1, 2025. This has led to widespread blackouts and the halt of most industrial production in Transnistria. Moldova declared a state of emergency in the energy sector, introducing energy-saving measures and rationing[1][3].

3. **\*\*Gazprom's Strategic Behavior\*\***: Gazprom's decision to halt gas supplies to Moldova's Moldovagaz as of January 1, 2025, was attributed to outstanding gas debts and payment issues. This move underscores Gazprom's strategic use of gas as a political tool, leveraging its dominant position to exert influence over dependent nations[3].

4. **\*\*Financial and Geopolitical Implications\*\***: The halt in gas transit via Ukraine will result in significant financial losses for Russia, estimated at approximately \$6.5 billion annually in revenue at current prices. Moreover, it diminishes Russia's geopolitical leverage, as its pipeline connection to EU gas markets now relies solely on Turkey, increasing its dependency on Turkey and potentially altering its alliance dynamics[1].

5. **\*\*EU's Response\*\***: The European Union has been intensifying efforts to reduce its dependence on Russian energy since the invasion of Ukraine in February 2022. The EU has diversified its energy sources, with Russian gas constituting only about 8% of the bloc's total gas imports in 2023, down from over 40% in 2021. The European Commission has released plans to help member states replace Russian gas, including filling needs through supplies of Greek, Turkish, and Romanian gas via the Trans-Balkan route[2].

## **\*\*Conclusion:\*\***

Gazprom's strategic behavior in gas supply disputes with European countries, particularly with Moldova, highlights the use of gas as a political tool to exert influence over dependent nations. The termination of gas transit via Ukraine marks a significant shift in Europe's energy landscape, with Moldova facing severe supply challenges. The EU's efforts to diversify its energy sources and reduce dependence on Russian gas have mitigated the immediate impact, but the geopolitical implications for Russia are substantial, including financial losses and diminished geopolitical leverage.

**\*\*Economic Impact of Energy Price Increases on Moldovan Consumers and Businesses Since 2022\*\***

## **\*\*Key Findings:\*\***

1. **\*\*Immediate Impact on Moldova\*\***: The termination of the Russian gas transit deal through Ukraine as of January 1, 2025, has significantly affected Moldova, particularly the pro-Russian

separatist region of Transnistria, which was fully reliant on subsidized Russian gas via Ukraine. This has led to severe supply challenges, widespread blackouts, and a state of emergency in the energy sector[1].

2. **\*\*Inflation and Economic Impact\*\***: While specific recent data on Moldova's inflation and GDP is not available in the provided sources, the broader context suggests that energy price increases since 2022 have had a significant impact on Moldovan consumers and businesses. The reliance on Russian gas and the lack of alternative routes have exacerbated these challenges.

3. **\*\*Energy Dependency\*\***: Moldova's energy dependency, particularly on Russian gas, has made it vulnerable to price fluctuations and supply disruptions. The current situation highlights the need for diversification and investment in alternative energy sources.

4. **\*\*Regional Comparison\*\***: In contrast to Moldova, the Euro Area has seen a stabilization in inflation rates, with a slight increase to 2.40% in December 2024 from 2.20% in November 2024[2]. This suggests that the broader European economy has been less directly impacted by the recent energy price increases affecting Moldova.

5. **\*\*Long-term Implications\*\***: The halt in Russian gas transit through Ukraine is expected to have long-term implications for Moldova, including potential geopolitical and financial costs. The need for targeted support and stronger cooperation within the EU and with neighboring countries is emphasized to address these challenges[1].

#### **\*\*Recommendations:\*\***

- **\*\*Diversification of Energy Sources\*\***: Moldova should prioritize the diversification of its energy sources to reduce dependency on Russian gas.
- **\*\*Infrastructure Development\*\***: Investment in infrastructure to support alternative energy routes and sources is crucial.
- **\*\*International Cooperation\*\***: Strengthening cooperation with the EU and neighboring countries can provide necessary financial and infrastructural support.
- **\*\*Economic Resilience\*\***: Building economic resilience through diversified industries and robust energy policies is essential for mitigating future shocks.

#### **\*\*Limitations:\*\***

- **\*\*Data Availability\*\***: Recent specific data on Moldova's inflation and GDP is not available in the provided sources, limiting the depth of analysis.
- **\*\*Broader Economic Context\*\***: The analysis focuses on the energy sector, with limited discussion on the broader economic context and other factors influencing Moldova's economy.

#### **\*\*Conclusion:\*\***

The economic impact of energy price increases on Moldovan consumers and businesses since 2022 has been significant, particularly with the recent halt in Russian gas transit through Ukraine. Addressing these challenges requires a multifaceted approach, including diversification of energy sources, infrastructure development, and international cooperation.

#### **\*\*Political Analysis of Pro-Russian Factions in Moldova and Their Potential Influence on Upcoming Parliamentary Elections Amid the Current Energy Crisis\*\***

#### **\*\*Key Points:\*\***

##### 1. **\*\*Energy Crisis and Political Manipulation:\*\***

- - Russia halted gas supplies to Transnistria on January 1, 2025, creating an unprecedented energy crisis in the region[1].

- - This move is seen as a geopolitical maneuver by the Kremlin to destabilize Moldova's pro-European leadership and influence the upcoming parliamentary elections.

## 2. **\*\*Strategic Objectives:\*\***

- - The Kremlin aims to demonstrate the indispensability of Russian gas transit through Ukraine to Europe, pressuring European actors to secure revenues for Gazprom[1].
- - By fueling dissatisfaction among Moldovan voters, Russia hopes to pave the way for a more Russia-friendly administration in the parliamentary elections scheduled for later in 2025[1][2].

## 3. **\*\*Economic and Political Leverage:\*\***

- - The energy crisis undermines Moldova's economic stability, creating opportunities for Russia to reassert influence and deter further European integration[1].
- - Moscow's endgame could involve leveraging Moldova's reliance on electricity imports to consolidate control over the country.

## 4. **\*\*Moldova's Political Landscape:\*\***

- - Moldova continues to navigate a complex relationship between pro-Western and pro-Russian factions, with recent years seeing closer ties with the European Union[4].
- - The country has faced significant interference from Russia, including election manipulation and energy blackmail, as outlined in a 2021 FSB document[4].

## 5. **\*\*Upcoming Parliamentary Elections:\*\***

- - The parliamentary elections are expected to be held in September 2025, within the legal time frame as per the Electoral Code and the Constitution[2].
- - The current energy crisis and Russia's strategic maneuvers are likely to have a significant impact on the election outcomes, potentially favoring pro-Russian factions.

**\*\*Conclusion:\*\*** The current energy crisis in Moldova, exacerbated by Russia's decision to halt gas supplies to Transnistria, is a critical factor in the upcoming parliamentary elections. The Kremlin's strategic objectives aim to destabilize Moldova's pro-European leadership and influence the election outcomes. The effectiveness of these tactics remains uncertain, but they underscore the complex political landscape in Moldova and the ongoing struggle between pro-Western and pro-Russian factions. The resilience of Moldova's leadership and the solidarity of its European and Ukrainian partners will be crucial in shaping the region's future.

## **\*\*Recommendations:\*\***

- **\*\*Emergency Energy Supplies:\*\*** Support from the European Union and Ukraine will be crucial in providing emergency energy supplies and mitigating economic strain.
- **\*\*Political Stability:\*\*** Moldova must address political, economic, and security challenges, including the status of Russian troops stationed in Transnistria, to ensure stability and sovereignty.
- **\*\*International Solidarity:\*\*** The international community should remain vigilant and supportive of Moldova's democratic processes, countering Russian interference and ensuring the integrity of the parliamentary elections.

**\*\*Brief Report: Impact of Energy Crisis on Food Prices and Access in Moldova, particularly in Transnistria\*\***

## **\*\*Key Findings:\*\***

1. **\*\*Energy Crisis Context\*\*:** The energy crisis in Moldova, particularly in the breakaway Transnistria region, has been exacerbated by the halt in Russian gas supplies via Ukraine following the expiration of a five-year transit agreement on January 1, 2025[1][3][5].

2. **\*\*Immediate Consequences\*\*:** The cessation of gas supplies has led to power cuts in parts of Moldova, including Transnistria, which has been controlled by pro-Russian separatists since the early 1990s and had been receiving Russian gas through Ukraine[1][3].

3. **\*\*Projected Impact on Food Prices and Access\*\*:**

- **\*\*Inflation and Economic Stability\*\*:** The energy crisis is expected to contribute to higher inflation rates, which could further strain the economic stability of Moldova and particularly affect vulnerable

populations such as the elderly, low-income families, and rural communities[2][4].

- - **Food Security**: The energy crisis could lead to increased food prices due to higher production and transportation costs, potentially exacerbating food insecurity in vulnerable populations. However, specific projections for the winter of 2025-2026 are not available in the recent sources.

- - **Regional Tensions**: The situation is also expected to increase regional tensions, with Moldova accusing Russia of attempting to destabilize the country through the energy crisis and disinformation campaigns[1].

#### 4. **Economic and Social Implications**:

- - **Economic Strain**: The energy crisis could lead to significant economic strain on Moldova, particularly affecting low-income households and rural communities who are already vulnerable to economic shocks[4].

- - **Social Impact**: The crisis could have severe social implications, including increased poverty and food insecurity, particularly during the winter months when energy demands are higher.

**Conclusion**: The energy crisis in Moldova, particularly in Transnistria, is expected to have significant impacts on food prices and access for vulnerable populations during the winter of 2025-2026. While specific projections are not available, the crisis is likely to exacerbate economic instability, increase food prices, and worsen food insecurity, particularly affecting the elderly, low-income families, and rural communities.

#### **Recommendations**:

- **Emergency Assistance**: Immediate emergency assistance, including food aid and alternative energy sources, should be provided to vulnerable populations.

- **Long-term Solutions**: Long-term solutions, such as diversifying energy sources and improving energy efficiency, should be explored to mitigate future crises.

- **International Support**: International support and cooperation are crucial to help Moldova address the energy crisis and its social and economic implications.

#### **Sources**:

- [1] <https://www.aa.com.tr/en/energy/general/moldova-summons-russian-diplomat-over-disinformation-about-energy-crisis-in-transnistria/46753>

- [2] <https://tass.com/economy/1899755>

- [3] <https://www.carbonbrief.org/daily-brief/world-endures-decade-of-deadly-heat-as-2024-caps-hot-test-years-on-record/>

- [4] <https://www.ebrd.com/documents/corporate-strategy/strategy-implementation-plan-202527.pdf>

- [5] <https://www.aa.com.tr/en/energy/general/halting-russian-gas-supply-via-ukraine-to-have-drastic-consequences-for-eu-slovakian-premier/46591>

**Brief Report: Estimated Food Insecurity in Moldova, Including Transnistria, Due to the Energy Crisis in 2025-2026**

#### **Key Findings**:

1. **Energy Crisis Impact**: The recent halt in Russian gas supplies to Moldova, particularly affecting the breakaway region of Transnistria, has exacerbated the energy crisis, leading to increased concerns about food insecurity[2][4].

2. **Projected Food Insecurity**: Specific, up-to-date projections for 2025-2026 from WFP, FAO, and FEWS NET on the number of people in Moldova, including Transnistria, expected to experience Phase 3+ (Crisis or worse) food insecurity are not readily available in the provided sources. However, the broader context indicates a worsening situation due to the energy crisis and its economic impacts.

3. **General Trends**: The energy crisis, combined with economic instability and potential climate shocks, is expected to contribute to increased food insecurity in the region. Reports from the UN food agency highlight climate, conflict, displacement, and economic instability as key drivers of food insecurity, affecting millions in similar contexts[4].

4. **Data Availability**: The Humanitarian Data Exchange (HDX) provides various datasets from FEWS NET, WFP, and FAO on food security indicators, acute food insecurity classifications, and staple food prices, but these do not include specific, recent projections for Moldova and Transnistria for 2025-2026[3].

5. **Regional Context**: The conflict in Ukraine and the cessation of Russian gas flows through Ukraine have significant implications for the energy and economic stability of Moldova, including Transnistria. This situation is likely to exacerbate food insecurity, particularly in vulnerable regions[2][4].

**Recommendations**

- **Monitoring**: Continuous monitoring of food security datasets from WFP, FAO, and FEWS NET is crucial for timely updates on the situation in Moldova and Transnistria.
- **Economic Support**: External financing and economic support are critical for mitigating the impacts of the energy crisis on food security in the region.
- **Diplomatic Efforts**: Diplomatic efforts to address the energy crisis, including negotiations on gas supplies, are essential for stabilizing the economic and food security situation in Moldova and Transnistria.

**Conclusion**

While specific projections for 2025-2026 are not available in the provided sources, the energy crisis in Moldova, exacerbated by the halt in Russian gas supplies, is expected to worsen food insecurity, particularly in Transnistria. Continuous monitoring of food security indicators and timely economic support are crucial for mitigating these impacts.

**Disruptions to Supply Chains and Agricultural Production in Moldova: Impact on Food Availability and Affordability**

Recent developments in Moldova highlight significant challenges in energy supply, which have cascading effects on agricultural production and food availability, particularly for vulnerable groups.

**Key Points**

1. **Energy Crisis**: Moldova is experiencing an energy crisis, exacerbated by insufficient supplies and rapidly rising household costs. This situation is further complicated by the country's reliance on external energy sources, such as those from Transnistria, which are currently disrupted[4].
2. **Impact on Agriculture**: The energy shortages are affecting agricultural production, including greenhouse operations and livestock farming. These disruptions can lead to decreased food production, impacting both availability and affordability.
3. **Vulnerable Groups**: Vulnerable groups, such as older people and individuals with disabilities, are particularly affected by these disruptions. They face isolation and limited access to services, which can exacerbate nutritional deficiencies[5].
4. **Quantifying the Impact**: While specific data on the decrease in food production and its impact on nutritional intake in Moldova is not readily available in the recent sources, the broader context suggests significant challenges. For example, the energy crisis has led to the shutdown of industries in Transnistria, including the largest electrical plant, which has switched to coal but operates at reduced capacity[4].
5. **Humanitarian Response**: The European Commission has allocated €8 million for humanitarian projects in Moldova, focusing on aiding Ukrainian refugees and Moldovan host communities. This includes cash assistance, access to critical services like healthcare and



education, and psychosocial support[1].

**\*\*Conclusion:\*\***

The energy shortages in Moldova are significantly impacting agricultural production and food availability, particularly for vulnerable groups. While specific data on the decrease in food production and nutritional intake is not available, the overall situation indicates a need for sustained humanitarian support to mitigate these effects.

**\*\*Recommendations:\*\***

- **\*\*Immediate Humanitarian Aid\*\***: Continued and increased humanitarian assistance is crucial to support vulnerable populations in Moldova.
- **\*\*Energy Security\*\***: Addressing the energy crisis through diversified and secure energy sources is essential to stabilize agricultural production and food supply chains.
- **\*\*Long-term Solutions\*\***: Developing and implementing transparent plans for energy security, including unbundling and increased oversight, can help prevent future disruptions[4].

**\*\*Sources:\*\***

[1] [https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/news/new-eu148-million-eu-humanitarian-aid-package-ukraine-2025-01-13\\_en](https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/news/new-eu148-million-eu-humanitarian-aid-package-ukraine-2025-01-13_en) [4]  
<https://www.csis.org/analysis/energy-crisis-provides-opportunity-moldova> [5] <https://reliefweb.int/report/ukraine/ukraine-summary-humanitarian-needs-and-response-plan-and-regional-refugee-response-plan-january-2025-enuk-0>

**\*\*Brief Report: Potential Spillover Effects of Moldova's Energy Crisis on Regional Food Security\*\***

**\*\*Key Findings:\*\***

1. **\*\*Energy Crisis Impact on Agriculture\*\***: Moldova's energy crisis, triggered by Russia's cessation of gas supplies to Transnistria, could significantly impact the country's agricultural sector, which accounts for about 40% of its GDP[1][2].
2. **\*\*Regional Vulnerabilities\*\***: Neighboring countries, particularly those with existing vulnerabilities or high dependence on Moldovan agricultural exports, could face spillover effects on food security. Romania and Ukraine are key trading partners, with Romania's GDP per capita being more than 2.5 times larger than Moldova's, indicating a potential for economic resilience, but Ukraine's economic situation is more precarious[2].
3. **\*\*Cross-Border Trade\*\***: Disruptions in Moldova's agricultural production and processing could lead to reduced exports, affecting cross-border trade. This could result in higher food prices in neighboring countries, particularly for products like sunflower seeds, plums, and grapes, where Moldova is a significant producer[2][5].
4. **\*\*Food Prices and Displacement\*\***: Increased food prices could exacerbate existing vulnerabilities in neighboring countries, potentially leading to displacement of populations seeking more stable food sources. The crisis could also impact the livelihoods of farmers and workers in the agricultural sector, further destabilizing regional food security[1][4].
5. **\*\*Long-Term Impacts\*\***: The energy crisis underscores the need for Moldova to diversify its energy sources and invest in modern agricultural technologies to enhance resilience. Failure to address these structural challenges could lead to long-term impacts on regional food security[1][5].

**\*\*Recommendations:\*\***

1. **\*\*International Assistance\*\***: Immediate international assistance is crucial to help Moldova manage the energy crisis and mitigate its impacts on the agricultural sector.
2. **\*\*Diversification and Investment\*\***: Moldova should prioritize diversifying its energy sources and investing in modern agricultural technologies to enhance resilience.
3. **\*\*Regional Cooperation\*\***: Enhanced regional cooperation and coordination are necessary to address potential spillover effects on food security in neighboring countries.

**\*\*Sources:\*\***

1. **\*\*CSIS Analysis\*\***: "An Energy Crisis Provides Opportunity in Moldova" - CSIS, 2025-01-07[1].
2. **\*\*Economy of Moldova\*\***: Wikipedia, 2024-12-30[2].
3. **\*\*Joint Statement\*\***: Nordic Baltic countries on the energy situation in Moldova, 2025-01-07[3].
4. **\*\*Moldovan Authorities\*\***: Statement on backing citizens affected by the Transnistrian region, 2025-01-09[4].
5. **\*\*Verum Group Interview\*\***: On the future of the agri-food industry, 2025-01-15[5].