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COOPERATION ACTIONS OF THE REPUBLIC OF MOLDOVA WITH REGIONAL ACTORS REGARDING ENSURING ENERGY SECURITY IN THE CONTEXT OF THE WAR IN UKRAINE

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Abstract

The Republic of Moldova has no energy resources of its own and is completely dependent on imports of fossil fuels and electricity. A consequence of the war is the lack of limited access to the markets of the Russian Federation, especially for Moldovan farmers, which affected exports to eastern markets, access to them being difficult or even blocked by the war.

This article aims to provide the energy security situation of the Republic of Moldova before the beginning and during the war in Ukraine. The author tries to present the efforts of our country to face the new regional challenges and draw some perspectives on providing the necessary resources without significantly affecting the well-being of the citizens of the country.

Keywords: *energy security, natural gas, the Ukraine war, regional (in)stability, economy*

The Republic of Moldova has no energy resources of its own and is completely dependent on imports of fossil fuels and electricity. A consequence of the war is the lack of limited access to the markets of the Russian Federation, especially for Moldovan farmers, which affected exports to eastern markets, access to them being difficult or even blocked by the war.

Before the war, the Republic of Moldova exported about 8% of its goods to the market of the Russian Federation, and fruits and vegetables had a large share. For example, about 90% of apple production went to the Russian market. Under the current conditions and after a new fruit and vegetable embargo imposed on August 15, 2022 by Russia on the Republic of Moldova, with the exception of the separatist Transnistrian region, Chisinau is forced to orient its exports to the EU even more. Brussels has already increased quotas for Moldovan fruits and offered zero taxes on them. At the moment, Moldova is trying to reorient exports to other destinations, to the West and to the Arab states, which is quite complicated. Due to the Russian invasion in the neighboring country, the import logistics chains of the eastern countries, where most of the mineral fertilizers and plant protection substances that have been brought. There was a suspension of imports of raw materials for processing industries, for example the furniture industry. Inflation has become the main world

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problem, and obviously also for the Republic of Moldova. A pronounced slowdown in real GDP growth has already been seen amid the indirect impact of bottlenecks in European production chains, deteriorating confidence in the economy and further erosion of real disposable income due to higher inflation. Since the beginning of the year, supply-side inflationary shocks have increased, practically canceling the effect of the government's measures to moderate the increase in prices for energy products.

This war once again demonstrated the interests of the Russian Federation, the mechanisms it is willing to use to achieve these interests, but also the fact that it is not a reliable economic partner. Thus, in order to get rid of this dependence but also from the blackmail of Russia, with the outbreak of the conflict in Ukraine, some countries in Europe increased the production of coal-based energy. Nuclear power, for one, has received renewed attention as a reliable, long-term source of zero-emission energy. However, Russia remains the world's largest exporter of wheat and forest products and a source of strategic resources such as nickel, cobalt and platinum. Regardless of the outcome of the war, Western companies will remain reluctant to return to Russia or invest in it in the future, the risks being too great. For example, Poland began to create an alliance with Great Britain, and Ukraine with Poland. Turkey and Azerbaijan have signed a joint defense agreement despite Turkey being part of NATO.

Therefore, we note that although initially this war created a collapse of the world and regional economy, the positive side is that it pushed states to get rid of dependence on Russian resources. For the highly developed ones it was simpler, the developing ones needed support and financial help, but the result is encouraging. Last year, Europe saw natural gas consumption fall by more than 20% as businesses and households were pushed to save more amid skyrocketing prices caused by supply shortages. After a challenging year in which Russia's invasion of Ukraine triggered an ongoing energy crisis and accelerated inflation across Europe, and a summer marked by record heat waves and drought, most governments, as well as people, understood the need to transition to renewable green energy. This would help states that do not have energy resources such as natural gas and would favor the environment. Moreover, this period saw an increase in the use of renewable energy sources and a more calculated use of limited energy sources. Most residents of this region believe that the war in Ukraine and its consequences on the price of oil and gas should accelerate the green transition. When asked to rank their energy priorities, most citizens expect their government to prioritize renewable energy development before focusing on diversifying energy supply to avoid excessive dependence on a single energy supplier. All these crises and problems have shown that the social protection systems that are the basis for combating and reducing poverty must be improved and modernized, they must be updated to make them effective in the face of long-term shocks and challenges.

Energy security is no longer just an economic policy objective, but has become a constant concern for the international community. The problem of ensuring the energy security of the state has always been one of the main concerns of the governments of the world's states. This being one of the main conditions for ensuring the sustainable development of the national economy, social equity and, last but not least, the full sovereignty of the state. A fluid perspective for ensuring the energy security of the Republic of Moldova in the future is its participation in the Black Sea basin. Resulting from the fact that the Black Sea has many large rivers such as the Danube, Dniester, Bug, Dnieper, the Republic of Moldova promotes its interests within the regional cooperation factors aimed at these latter rivers.

At the present time, when we talk about the specifics of the collaboration of the Republic of Moldova with the international community in order to overcome the consequences of the global energy crisis, we focus on the direction of the Republic of Moldova to reduce its energy dependence on Russia.

In addition to the Iasi-Ungheni interconnection and its extension to Chisinau, it is also essential the interconnection with Romania in terms of electricity (Isaccea-Vulcăneşti-Chisinau, Iaşi-Ungheni-Străşeni and Suceava-Bălți).

Electricity interconnections are very important. The Moldovan authorities buy electricity, through intermediary off-shore companies (Energokapital), produced in Cuciurgan (Transnistrian region), based on Russian natural gas.

The problem, however, is that the Cuciurgan Thermal Power Plant, controlled by the Russian company, does not pay for the Russian natural gas delivered under the contract signed between Moldovagaz and Gazprom. Therefore, Moldova accumulates debts towards the Russian concern, in parallel, the Moldovan authorities also buy electricity from Cuciurgan, produced with the use of unpaid gas. Consequently, Moldova pays twice. Additionally, in both cases Chisinau contributes (in)directly to the well-being of the separatist regime. More than that, through this situation the separatist regime together with Russia keep the Moldovan energy system " under control".

For these reasons, the expansion of the Iasi-Ungheni gas pipeline must take place in parallel with the interconnection of Moldova to the electricity market in Romania. Moldova must diversify both its sources of delivery (including routes) of natural gas and electricity. In this way, the country can be gradually removed from dependence on the Transnistrian region (for electricity) and Gazprom (for natural gas). Of course, there is a need for political will, conditionality from external factors, but also maximum transparency, in order to eliminate the discretion of the authorities to preserve the current status-quo.

During the war the process of providing electricity produced in Cuciurgan changed. In the following we will make a brief retrospective of the situation regarding

the electricity supply from Cuciurgan and its effects on the moldovan citizens and the country as a whole.

On October 10, 2022, Ukraine cut off electricity supply due to massive Russian military attacks on energy infrastructure. Some of the missiles hit the energy infrastructure and caused the stoppage of electricity exports to the European Union and the Republic of Moldova. Our country is directly affected by the Russian bombing of Ukraine, considering that we purchase 30% of the electricity consumed from the neighboring country.

From November 1, 2022, the Cuciurgan Power Plant on the left of the Dniester no longer provided electricity. Thus, Romania became the main electricity supplier of the Republic of Moldova, covering 90 percent of consumption (zdg.md, 2022). The interruption of electricity supplies from the Cuciurgan Power Plant on November 1 hit the Republic of Moldova hard, highlighting the fact that we cannot face the large-scale energy war launched by Russia. In addition to the fact that tariffs have increased again, affecting even more the final consumers, another sad reality stood out: the Republic of Moldova cannot provide its own electricity transport. Even if it buys from Romania at market prices, it cannot bring everything it needs to the destination, bypassing the Transnistrian region.

In Romania, however, the price is much higher, because the raw material from which the energy is produced is expensive. If until October the Republic of Moldova received 70% of its energy import needs from Cuciurgan at the price of 63 dollars per megawatt and another 30% from Ukraine at the price of 77 dollars per megawatt, now the prices paid for the electricity purchased from the market Romanian, they ranged between 145 and 390 dollars for one megawatt.

Already at the beginning of October 2022, the Russian concern Gazprom, despite the contract concluded with Moldovagaz, reduced gas supplies to the Republic of Moldova to 5.7 million cubic meters per day. Gazprom motivated the reduction by some transportation difficulties through Ukraine. However, the reason cannot be taken seriously, because Gazprom has the opportunity to deliver the gas through another route, through the Turkstream pipeline, bypassing Ukraine.

According to political observers, gas supplies were reduced to create an energy shortage and increase the population's dissatisfaction with the actions of the authorities. However, the Russian Federation chose to use another energy lever to exacerbate the situation in the Republic of Moldova, because gas started to become cheaper on international exchanges, and from October 1, the formula by which Moldovagaz buys from Gazprom changed. Therefore, the purchase price was about 820 dollars for a thousand cubic meters, while in August 2022, it reached 1400 dollars. In addition, gas tariffs have already been increased and can no longer generate a shock among the population.

The reduction of gas supplies was operated to cause the cessation of electricity supplies to the right bank and this is where the Tiraspol puppet regime entered the scene. It is worth noting that the transnistrian region has at most 400 thousand people, while the right side of the Republic of Moldova has at least 2.5 million inhabitants. Gas is mostly consumed by industry in Transnistria, especially by the Cuciurgan Power Plant and a number of other energy-consuming enterprises, which are not concerned with rationalizing consumption, as they practically do not pay for energy and gas consumption. Chisinau is sure that the gas allocated to the Transnistrian part would be sufficient for the population, but also for energy production, if the resources were consumed rationally, as is happening on the right side, some energy-consuming enterprises here being even closed, because they are not profitable at such a high price of resources.

Finally, the rupture has occurred, and it would appear that Russia has used all its levers of energy pressure. The gas tariff in the Republic of Moldova reached 30 lei per cubic meter, and that of electricity was more than five lei for one kilowatt. In both cases, the purchase prices were already at the level of those on the European market and it cannot be worse, at first glance.

Of the six high voltage lines through which electricity reaches the Republic of Moldova, only one does not pass through the Transnistrian region. It is about the line that enters from Ukraine via Novodnestrovsk (even the Vulcăneşti-Isaccea high voltage line, which connects us to Romania, reaches Cuciurgan, from where the energy is distributed further). The line from Novodnestrovsk can transport about 60%-70% of the energy needs of the Republic of Moldova, but there is an increased risk that it will be destroyed as a result of the Russian bombings.

Meanwhile, the Chisinau authorities do not give any signal that they intend to accelerate the construction of the Vulcăneşti-Chisinau line, which would bring energy from Romania, without depending on Tiraspol (Chişlea, 2022).

Energocom which is a Moldova State Corporation (founded to ensure the efficient and transparent operation of the internal electricity market, to promote electricity exports, to increase the investment attractiveness of the objects of the electricity sector), announced on December 27, 2022, that it extended the electricity supply contract with the Cuciurgan Thermal Power Plant (ЗАО "Молдавская ГРЕС") for the month of January 2023. The electricity purchase price remained unchanged - 73 USD/MWh. Thus, the electricity procured from the Cuciurgan Thermal Power Plant for the month of January constituted 86% of the consumption needs of the right bank of the Dniester, in addition to the energy produced from renewable sources (zdg.md, 2022).

Regarding the recent situation on energy security, we mention that the Republic of Moldova is resuming electricity imports from Ukraine. For May 2023, Energocom will buy 92% of the required energy from the Cuciurgan Power Plant in the

Transnistrian region, and the rest from Ukrhidroenergo. The price of electricity purchased from Ukrhidroenergo will be 95 dollars MWh for daytime hours and 55 dollars MWh for night hours. It is the first contract signed by Energocom with distinct prices for day and night.

Starting from June 2023, the Romanian company Nuclearelectrica, from which the Republic of Moldova bought electricity in the last months, has scheduled maintenance works. In case of need, during peak hours, Energocom will purchase electricity from the Romanian stock market (Mirca, 2023).

The above-mentioned reflect the fact that energy security in Moldova is unstable and fragile, being affected by both objective and subjective factors. As we have already seen, the state authorities in these uncertain circumstances need to react quickly, collaborating with several regional actors in order to provide the necessary energy resources for the population of the Republic of Moldova.

Therefore, we consider that integration into the European energy market is a realistic objective that provides for the liberalization of the Moldovan energy market. Only by adjusting to European rules and practices, the Moldovan energy system can be cleansed of obscure schemes by which both the natural gas and electricity sectors have been and continue to be parasitized. That is why the European agenda must include clear aspects related to the energy sector (natural gas, electricity) and conditioning as strong as it takes place in the field of justice or the banking sector.

The role of the European Union, but also of the member states (Romania), is essential for the reform of the Moldovan energy sector. The Chisinau authorities must engage in conditional reforms, closely verified by European partners, including through the Energy Community.

The bankruptcy of the energy sector could generate a crisis of proportions, so far ignored, considering the fact that historical debts to Gazprom are about 65% of GDP. Therefore, both natural gas and electricity interconnections require attention.

Competition, non-existent in this field, but possible through the correct transposition of European legislation, would lead to lower prices and the entry of new operators on the local market. Integration into the European energy space can contribute to reducing dependence on the separatist regime from Tiraspol, but also on Russia, which represents a real investment in energy security, but also the country's political stability.

We also add that NABUCCO is an alternative that would reduce the risks to the energy security of the Republic of Moldova. Thus, Nabucco is a European project, which, simplistically speaking, involves the creation of a gas pipeline that will start from the Caspian Sea and bypass the Russian Federation. The European Union, as well as the whole of Europe, are dependent on the Russian Federation in terms of natural gas supply. Dependence on energy imports is one of the main problems of the European Union. EU officials are worried about the increase in energy dependence

(oil and natural gas), which today covers approximately 30% of energy imports from Russia and this percentage may increase in the medium term, reaching, according to some estimates, to 70%.

Nabucco's strategic objectives are: opening a new natural gas supply corridor for Europe and for the countries involved in the project and delivering cost-effective gas sources; increasing the transit profile of participating countries along the entire length of Nabucco; contributing to the security of natural gas supply for all partner countries and for Europe as a whole; strengthening the role of gas pipeline networks for all Nabucco partners that have a connection with the European gas network.

The main advantage that is also mentioned in the Energy Strategy of the Republic of Moldova until 2030 aims at a strategic objective in the consolidation of the energy strategy – the diversification of gas supply alternatives, including from Middle Asia and the Near East. As we mentioned before, the existing network of main gas pipelines does not ensure the energy security of the Republic of Moldova.

In 1992, Chisinau, which accounts for over 50% of the natural gas consumption in the Republic of Moldova (the right bank of the Dniester), found itself without gas after the secessionist authorities from Tiraspol blocked supplies by closing the 26A tap and suspending the gas supply through the main gas pipeline Odesa-Tiraspol-Chisinau. As a result, the gas pipeline built at the end of the 1960s can no longer be used at full capacity. In February 2005, after a break of 13 years, an attempt was made to resume the supply of gas through this pipeline, but after 8 hours of operation, the Tiraspol administration imposed the closing of the tap (Nabucco-pipeline.com, 2022).

For the reliable supply of natural gas to Chisinau and the districts in the center of Moldova, a segment of the Rîbnița-Chisinau pipeline was urgently rebuilt, but it passes through areas with a high risk of landslides, which endangers deliveries. Also, to ensure the security of the country in the field of natural gas supply, in 2006 the construction of the Tocuz-Căinari-Mereni pipeline was initiated, with a total length of 64 km. At the moment, the construction has been completed and the testing of the pipeline that will connect Chisinau to the main gas pipelines through which Russian natural gas is transported to the Balkans is taking place.

A rather current problem for the energy security of the Republic of Moldova in the near future is the dialogue with Ukraine regarding the operation of the hydropower plants located on the banks of the Dniester River. Civil security is the key element of an efficient and responsible government. Although it does not seem to be part of the national interest in a visible way, as is the resolution of the Transnistrian conflict, human security remains a priority.

For various political and economic reasons, both Moldova and Ukraine have failed to pay the necessary attention to solving environmental problems, which already affect the ability of both states to face threats of non-military origin.

In this situation, we are talking about the impact of the construction of strategic economic objectives, such as the Novodnestrovsk hydropower plant. The operation of this hydroelectric plant affects the security of the inhabitants of both states in a very dangerous way, even if the impact for Ukrainian citizens is not so visible at the moment. The negotiations for the launch of this project were long and involved the transfer of a part of the territory of the Republic of Moldova in order for it to become viable.

Currently, however, for civil society and the authorities in Chisinau, the power plant in Novodnestrovsk is turning into a direct threat to the security of citizens, while for the Ukrainian side, which manages the project, it is a source of economic benefits. The hydropower plant has become a source of financial resources for the state budget. The possible consequences on the ecology and, therefore, on the safety of the citizens, are better perceived in Chisinau than in Kiev. Civil society in Moldova managed to put more pressure on its own government authorities than environmentalists in Ukraine.

The prospects of electricity in the Republic of Moldova. In the Republic of Moldova there are two generation sources that can compete on the electricity market - CERSM and imports from Ukraine. The other accessible generation sources cannot currently be considered as potential competitors. The electricity generated by the three CETs, NHE Costesti and the sugar factories is exempt from market competition. Electricity imports from Romania cannot compete because these deliveries are only possible as a measure of last resort, in exceptional cases and for technical reasons, related both to the fact that the electricity system in Moldova is not interconnected synchronously with the Romanian one, as and the reduced capacity of the interconnections.

Under these conditions, the creation of a competitive market at the level of generation can at least be characterized as difficult. Imports from Ukraine cannot be influenced by the Moldovan market, in terms of price and quality, that is, the price of imports from Ukraine will not fluctuate depending on the demand and supply on the Moldovan market.

As for the electricity from CERSM, it can be competitive only when the generation costs at least equal the price of imports from Ukraine. Although the plant uses natural gas, considered the cheapest fuel in terms of price and environmental impact, the cost of electricity imported from Ukraine is an average one on the common market, which combines both nuclear and hydro energy, whose costs considerably reduce the average price of electricity on the Ukrainian market.

These two sources of electricity have, each separately, the capacity to cover all the demand for electricity in Moldova, i.e. up to 70% of the demand, the remaining 30% being covered from the regulated sources (CETs, etc.). And CERSM has the technical capacity to deliver electricity to markets other than the one in Moldova, thus not being dependent on the supply and demand situation on the Moldovan market.

Thus, none of the two generation sources liable to compete on the electricity market in Moldova are responsive to the evolution of demand and supply of this market.

Natural gas prospects. Following the series of reorganizations in the natural gas sector, an extraordinary market structure was reached, with the following elements: *Non-discriminatory market entry.* The market is formally de-monopolized: any legal entity that meets the criteria provided by law, can obtain an activity license in the natural gas sector. *Separation of transport and supply functions.* Transport, distribution and supply activities are carried out by separate companies. The enterprise "Moldtransgaz", holder of the transport license, is a separate legal entity, which is owned by S.A. "Moldovagaz", as well as the transport company "Tiraspoltransgaz" based in Transnistria, which is not licensed by ANRE *(National Agency for Energy Regulation of the Republic of Moldova)*. The function of wholesale supply of natural gas (import) is carried out by S.A. "Moldovagaz".

On the territory of the Republic of Moldova, main networks are built with a length of over 1,600 km, and gas networks over 21,000 km. Through the main lines, the Russian Federation annually transits via the Moldovan territory about 20 billion m3 of gas, which is almost 10 times more than all the gas consumed in the country (including the Transnistrian region) (moldovagaz.md, 2022).

On the 11th of May, 2o22, for the first time since the start of the war, Ukraine declared that it was suspending part of the transit of Russian natural gas to Europe. The reason given is that Russian troops, who now control the Novopskov compressor station in the Luhansk region, through which almost a third of the gas Russia exports to Europe via Ukraine, would redirect the gas to other consumers in the separatist region. At the same time, Gazprom claimed that there is no impediment for gas traffic to continue as normal.

Ukrainian company GTSOU, which operates Ukraine's gas system, said shipments on the Sokranivka route, citing a case of "force majeure," a clause invoked when a business is hit by something beyond its control. The company said it could not operate at the Novopskov gas compressor station due to "occupation forces' interference in technical processes", adding that it could temporarily move the affected flow to the Sudja physical interconnection point located on Ukrainian-controlled territory. The diversion of some quantities of gas to the eastern separatist region, the Ukrainian company claims, "jeopardized the stability and safety of the entire gas transportation system in Ukraine." GTSOU claims it has "repeatedly warned Gazprom" about the problems created by the intervention of Russian forces and the diversion of gas but "these calls have been ignored".

On the other hand, Gazprom, which holds the monopoly on Russian gas exports via pipeline, said that it is "technically impossible" for all traffic to be moved to the Sudja interconnection point further west, as proposed by GTSOU. This interconnection point is located in the territory controlled by Ukrainian troops.

Gazprom added that it fulfills all its obligations towards gas buyers in Europe. At the same time, "S.A. Moldovagaz did not receive official notifications on May 11, 2022 from Gazprom and OGTS of Ukraine regarding the restriction of natural gas supply to the points of connections between Alekseevka and Grebeniki gas transport system. Thus, gas deliveries to the Republic of Moldova were carried out as usual.

In these circumstances, certain prognoses cannot be offered given the fact that the war in Ukraine is in full swing and the insecurity at the border remains an obvious one.

The perspectives of thermal energy installations, including those with cogeneration. The basic idea of thermal energy installations, including those with cogeneration, consists in the fact that the combustion gases produced by burning fuels have high temperatures, so they present a high degree of transformability of internal energy into mechanical energy. The use of heat at these parameters for the production of technological steam or for heating is accompanied by important energy losses, which leads to an irrational use of a "higher quality good".

The future of the energy security of the Republic of Moldova comes from the actions taken by the state government. The policy of the energy sector must be based on ensuring the integrity of the internal gas and electricity market, guaranteeing the energy flow and diversifying energy sources. Governments always have strategic objectives on their agenda that aim for positions of power and dominance in the system of international relations. Only at the governmental level, the direct or indirect control of some energy resources can become an instrument of blackmail and a truly effective weapon. The use of "energy weapons" in international relations represents a form of blackmail, an action that can be classified as clandestine, covert or discreet techniques, aimed at achieving political, economic, military, etc. objectives.

Another dimension of the insecurity of our country is the fact that Transnistria has control over the operation of the energy system on which the energy security of our state depends. During this year we have already seen what this means, with even the supply of electricity being stopped. The war between Russia and Ukraine generates several risks for the energy security of the Republic of Moldova, among which is the dependence on Russian gas. Before the war, the Republic of Moldova imported approximately 100% of natural gas from Russia. The intensification of the conflict in Ukraine led to a decrease in the amount of gas delivered to Moldova, its price being increased. Another problem was the dependence on Ukraine's gas transport infrastructure, with Moldova importing gas from Russia through Ukraine's gas pipeline, and the escalation of the conflict between the two countries led to the blocking of this infrastructure. The increase in the price of gas affected the economy of Moldova, as the prices of energy products for consumers increased. These risks have significantly affected the energy security of the Republic of Moldova requiring new

security strategies and diversification of energy sources to reduce dependence on Russia and Ukraine's energy infrastructure.

Russia's invasion of Ukraine and the use of energy resources as a political weapon have generated an unprecedented crisis. Once the prices for energy consumption increased, the citizens of the Republic of Moldova entered into payment difficulties. Moldova received budget support worth 150 million euros for managing the energy crisis and supporting vulnerable groups from the EU. More than 600 thousand citizens benefited from compensation for energy consumption. More funds are invested in energy efficiency projects and renewable resources (eeas.europa.eu, 2023). In order to increase the security of the gas supply, the authorities of the Republic of Moldova propose to diversify the gas supply and create gas stocks for emergency situations or specific cases.

In conclusion, we can say that in the context of the war in Ukraine the most affected were and are the countries with a high dependence on natural gas imports for heating, which represent 30% of the demand for energy, industry or electricity, as well as countries closely linked to the EU energy markets. The prospects for economic recovery in the region close to Ukraine are under considerable uncertainty. However, the entire region has withstood the aftermath of Russia's invasion of Ukraine better than originally predicted. During 2023, economic growth is expected in the region stimulated and with the help of the programs carried out by some governments even during the pandemic. Even if under duress, the Republic of Moldova manages to escape from total energy dependence on the Russian Federation.

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