Abstract. The consequences of the war in Ukraine have a negative impact on the economies of many countries. A survey by the UN development program says that in just three months, 71 million people have reached the poverty line, which shows a much faster increase than during the pandemic. It is evident that the fuel prices, which have been increasing more and more, have influenced the increase in the prices of food and maintenance products. The ever-increasing growth of oil consumption and the economic crisis as a consequence of the war in Ukraine have pushed the price of Brent oil above $100/barrel, a record price recorded in recent years. We understand the challenges governments around the world now face to make quick decisions while ensuring those decisions position their countries' economies for a better future. Experts in the field say that the world must find solutions in the use of renewable sources to replace fossil fuels. This implies fair access for everyone to renewable energy technology, but without implemented policies that encourage domestic and foreign investments in renewable energy, of course and with subsidies from the state, we will not be able to achieve the desired goal.

Keywords: oil, oil producing/consuming companies, oil market, OPEC, Brent, WTI, Hydrocarbons, Barrel, Regulatory framework, Sanctions, oil price, gasoline, diesel


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Introduction. Fuel consumption has increased in recent decades, largely due to population growth, increased urbanization and accelerating economic development. The price of oil, in turn, fluctuates from day to day depending on various factors such as supply and demand, the global economy, environmental issues and last but not least, conflicts in the buying or producing countries which are increasingly numerous. Now, as a result of the war in Ukraine, there is greater pressure on governments around the world to make decisions quickly and ensure that those decisions position countries' economies for a better future.
OPEC and OPEC+, which includes most of the producing countries, are united in making decisions to control the oil market by setting the quantities of oil to be extracted for each member country.

Global daily demand for crude oil has steadily increased from about 91.2 million barrels per day in 2020 to 99.6 million barrels per day in 2022. For 2023, global oil demand will reach 101.9 million barrels per day, in particular, growth will be influenced by easing restrictions due to COVID-19 in China. The average annual OPEC oil price in 2022 was $100.08 per barrel. That's up from $69.89 a year earlier and comes on the back of energy shortages and sanctions imposed on Russia over the Ukraine war.

The Republic of Moldova was also affected, because it is dependent on petroleum products imported from foreign markets, and the main supplier in 2022 was Romania with a share of 100% of the total import of Gasoline and 84.40% in the import of Diesel, which makes the country vulnerable to rising fuel costs and supply disruption risks.

**The degree of its study in specialized literature.** The works of local and foreign scholars have been an important source in the disclosure of information regarding the evolutionary theories of the oil price and the concept of the international and local oil tanker market. The paper approaches the researched subjects by combining the theoretical and practical aspects, the performances of the oil companies were researched through statistical, mathematical, analysis and deduction methods.

**Scientific-methodological basis.** Normative acts and economic-statistical data provided by the regulatory body ANRE, statistical and financial reports of oil companies, data from the Department of International Statistics and of the Republic of Moldova, normative and legislative acts and informational resources on the web pages. A considerable contribution to the disclosure of information for the given study was made by the scientific research projects and works of the major international and domestic specialists in the studied field.

**The scope of the research** is to analyze the EU and Moldovs oil market, focusing on what can be the critical factors as well as the impact of the war in Ukraine on the price and the market structure.

**The tasks of the article** are to achieve the proposed goal by:
- researching specialized information sources in the field of the oil market, normative and legislative acts in force;
- analysis of the diversification of petroleum products and knowledge of their importance;
- addressing all aspects and consequences of the war in Ukraine, which directly or indirectly influenced the structure of the European and local oil market.

**Russian fossil fuels, next to the EU embargos.** Since Russia invaded Ukraine nearly a year ago, many countries have pledged to end or limit oil and gas imports to cut Moscow's revenue and weaken its war effort.

The EU, which was among the main importers of Russian energy, ended its purchases of oil at sea, and from 5 February 2023 a ban on products derived from Russian crude came into force. The United Kingdom also acted in the same way,
from December 5, 2022, it imposed a ban on Russian crude oil and refined products, and the United States, in turn, declared last March that it would stop importing Russian oil. Also in December 2022, an oil price cap was approved, designed to prevent Russia from getting above $60/b.

The Russian gas sector has also been targeted by sanctions. The EU has signalled it will cut Russian gas imports by two-thirds within a year.

At the same time, Moscow was cut off from Western products, blocking almost all technology transfers and sales of high-quality goods and services, and to neutralize President Putin's funds, the West froze about $324 billion of the Russian Central Bank's foreign reserves.

Several economists point out that never before have such complex sanctions been used against such an important actor as Russia, a nuclear power that sits on the UN Security Council.

The said sanctions practically affect important sectors of Russia, such as the financial, trade, energy, transport, technology and defence sectors.

The energy sector was sanctioned by introducing a price cap on the shipping of crude oil and petroleum products, banning imports of oil and coal from Russia and exports to them of technologies and investments intended for the energy sector.

Currently, the economic sanctions are extended until July 31, 2023. Despite all this, Russia was and is one of the top three oil and gas producers in the world, along with Saudi Arabia and the United States. It is also a key member of the OPEC+ group, where it is the second largest producer after Saudi Arabia, with twice the output of OPEC's second largest producer, Iraq. Although Russia's economic decline in 2022 provided good guidance for developments in 2023, challenges remain significant.

Basically, Russia kept its oil production at the same level in the last months of 2022, with an average of 10,273 thousand barrels per day. Only in April 2022, production fell due to Western bans on oil imports from Russia following the invasion of Ukraine, which began in February 2022, to 9,643 BBL/D/1K.

![Figure 1.1 Russia Crude Oil Production.](source: Elaborated by the author based on U.S. Energy Information Administration dates.)

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In February 2023, Russian crude oil production was estimated at 9,700 BBL/D/1K in Q1 2023 and will continue to decline to 9,000 BBL/D/1K according to Trading Economics estimates on March 26, 2023.

In the context of the sanctions imposed on Russia, Russian Deputy Prime Minister Alexander Novak stated on March 21, 2023, that Russia will continue to reduce oil production by 500,000 barrels per day until the end of June 2023, also mentioning that the world oil market is under unprecedented pressure from what he called "dangerous attempts to limit the price of Russian oil".

Russia's unilateral production cuts add to the OPEC+ agreement, which brings together the Organization of the Petroleum Exporting Countries and allies led by Russia, to reduce supply.

![Figure 1.2 Russia Crude Oil Production, forecast](https://tradingeconomics.com/russia/forecast)

**Figure 1.2 Russia Crude Oil Production, forecast**


Gazprom's own gas production in 2022 was also disproportionately affected, while Russian oil companies and independent gas producers launched some of their delayed projects and actually increased gas production in 2022. This led to the accumulation of a very significant reserve gas production capacity for Gazprom, estimated at approximately 117 billion m3 for 2022.

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Figure 1.3 Cumulative gas production by Gazprom from January 2021 to December 2022, by month (in billion cubic meters).


In 2022, the Russian company Gazprom produced 412.6 billion cubic meters of natural gas. This was about 20% less than the previous year. In addition, the gas producer reduced its exports to countries outside the Commonwealth of Independent States (CIS) by around 45% over the same time frame.

Figure 1.4 Gazprom's exports to so-called countries abroad (European customers excluding the Baltic republics, as well as Turkey and China) (MLD. m3).


To compensate for the losses, Moscow is trying to increase its supply of gas to those who need it. energy. The Chinese economy accelerated this movement.
According to Russia Fossil Tracker estimates, since the start of the war, Russia has earned 320 billion euros from fossil fuel exports.

Managers are trying to project optimism, creating scenarios for the company's healthy future development based on increased gas exports to China and higher domestic supply. Currently, Russian fields in eastern Siberia are connected to the Chinese market only through the Power of Siberia 1 pipeline, which is not expected to reach its design capacity of 38 billion cubic meters per year until 2025. China has reached an agreement with Russia to receive gas supplies also from Sakhalin through the Power of Siberia 3 pipeline, which is expected to reach the design capacity of 10 billion cubic meters in 2026. This will mean that in 2026 Russia will be able to export a total of 48 billion cubic meters of gas to China via pipelines, compared to the EU buying 155 billion cubic meters of gas from Russia in 2021 from fields in western Siberia. At the same time, Gazprom continues to invest in the gasification of Russian regions, but the profitability of the supply, especially to individual consumers in Russia, is relatively low, since the company bears the entire cost of connecting to the infrastructure.

Russia's federal budget depends heavily on taxes levied on exports of fossil fuels, particularly oil and gas. Russia's federal budget was about $343 billion in 2021, while taxes on oil and gas extraction and sales amounted to $127 billion (37%).

In 2022, Energy Intelligence reported that Russia's oil and gas tax revenues rose 93% in January-May compared to the same period in 2021, thanks to slightly higher Brent prices averaging $104 a barrel. In 2022, taxes on the extraction and sale of oil and gas accounted for a record 46% of the federal budget, according to calculations based on Bloomberg data and estimates of Russia's federal budget for 2022.

There are two important taxes on Russian oil exports: the mining tax (MET) and the export tax (ED). For 2022, the target rate for MET in 2022 was RUB 18,219/t (approx. USD 37/bbl), based on an estimated average selling price of USD 62.2/bbl, and the export tariff is stable at 5.9 USD per barrel. These high tax rates demonstrate that the costs of oil production in Russia are very low and that, at current selling prices, the vast majority of sales revenue is retained by the state in the form of taxes, providing funds to finance the large-scale invasion of Ukraine.  

Through the sanctions issued by the coalition against Russia by lowering the price limits for oil and oil products, however, Russia's budget vulnerability to fossil fuel revenues increases.

As a result of the sanctions, Russia announced an output cut of about 5 percent of its oil output in March, equivalent to 0.5 million barrels per day, as it struggles to find new buyers for its crude and products.

**Ensuring the European Union with oil and gas resources**

The European Union was Russia's largest trading partner, but now this interdependence is disappearing and there seems to be no way back. Since February 24, the European Union, the United Kingdom, the United States of America, Canada and certain countries in Asia, especially Japan and South Korea,  

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have established a system of international sanctions to end Russian military aggression.

Fatih Birol, director of the International Energy Agency (IEA), when he published the World Energy Outlook 2022 report, said that "Energy markets and policies have changed following Russia's invasion of Ukraine, not only in the short term, but also in Figure 2.1 Extra-EU imports of petroleum by partner, 2022 (share % of trade in value).

Figure 2.1 Extra-EU imports of petroleum by partner, 2022 (share % of trade in value).


As can be seen in figure 2.1, Russia was the largest supplier of petroleum oils in the first quarter of 2022, with a share of 26.0%. The impact of Russia's invasion of Ukraine has led to significant changes in the share of major partners due to several sanctions that directly and indirectly affect trade in energy products. Russia's share was 10% in the fourth quarter of 2022, down 16.0 percentage points from the first quarter of 2022. Saudi Arabian stocks (+3.6 pp), Angola (+2.1 pp), Norway (+1.5 pp), Iraq (+1.4 pp) and the United States (+1.3 pp) all increased.

Russia was also the largest supplier of natural gas to the EU, with a share of 31.3% in the first quarter of 2022, followed by Norway (25.8%) and the United States (16.1%) (Figure 2.2). Following Russia's invasion of Ukraine and in light of the sanctions imposed by the European Union, natural gas supplies from Russia have steadily declined. Compared to the first quarter of 2022, the share of Russia decreased by 12 percentage points and stood at 19% in the fourth quarter of 2022. In the same period, the shares of Qatar (+3.8 pp), Algeria (+3, 5 pp) and the United States (+2.6 pp) are growing.
In this context, the new geopolitical and energy market realities oblige the European Commission to increase Europe's energy independence from unreliable suppliers and volatile fossil fuels and to radically accelerate the transition to clean energy without emissions.

REPowerEU is the European Commission's plan to make Europe independent of Russian fossil fuels well before 2030, given Russia's invasion of Ukraine. The REPowerEU plan aims to, achieving energy savings, produces clean energy and diversification of EU sources of energy supply. This project is based on financial and legal measures aimed at building the new infrastructure and energy systems that Europe needs.

The REPowerEU plan sets out a series of measures aimed at rapidly reducing dependence on Russian fossil fuels and accelerating the green transition, while strengthening the resilience of the energy system at EU level. It is based on the following elements:

- **Diversification** - the EU is working with its international partners to find alternative sources of energy supply. In the short term, we need alternative sources of gas, oil and coal as quickly as possible and, looking to the future, we will also need renewable hydrogen.

- **Savings** - every citizen, every business and every organization can save energy. Small changes in behavior can make a big difference, if we all commit to

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those changes. Emergency measures will also be required in the event of a supply disruption.

- **Accelerating the transition to clean energy** - renewable energies are the cheapest and cleanest energy available and can be produced domestically, reducing our energy imports. REPowerEU will accelerate the green transition and stimulate massive investments in renewable energies. We also need to enable industry and transport to replace fossil fuels faster to reduce emissions and dependencies.

  To limit future shocks, a bold and global strategy combining investment, innovation, recycling and rigorous sustainability standards is essential.

  The European Commission unveiled on March 16, 2023 the new regulation, which sets targets for the production, refining and recycling of essential raw materials for the ecological and digital transition.10

  The Critical Raw Material Act (CRMA) regulation marks a new step in the EU’s intention to renew its reindustrialization and competitiveness agenda. This need has become more pressing after a year marked by high energy costs, supply chain disruptions and the United States' implementation of a large-scale investment plan under the Inflation Reduction Act (IRA)11

**Implementation of strategies at national level in the use of alternative fuels.** Recent developments in the industrial economy have highlighted the complexity of the economic environment of companies and organizations in the Republic of Moldova, considering the growing share of sustainable development issues, companies, apart from the requirement to be competitive in their markets, are also increasingly questioned about their values and behaviour towards the basic principles of sustainable development.

  Economic analysis in the field of business-environment relations has been heavily invested in recent years. The debate particularly involves how technical progress is produced and used by companies, not forgetting the relationship between technical progress and the market or between political power and the progress of science and technology, and what are the environmental effects of these interactions. Economic outcomes will therefore be affected by how complex environmental and sustainability issues are addressed in the coming years.

  The Republic of Moldova, as a contracting party to the Treaty on the Energy Community, in order to comply with the requirements of international commitments, is to develop a new public policy document, which will define the actions and measures expected for the energy sector. Also, the Republic of Moldova is going to transpose into national legislation Regulation (EU) 2018/1999

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on the governance of the energy union and climate action (part of the Clean Energy Package), one of the requirements of which is the development and approval of integrated national energy and climate plans in accordance with decision of the Ministerial Council of the Energy Community no. 2021/14/MC-EnC.

Now that the Republic of Moldova has obtained the status of a candidate country for EU accession, a title granted together with a list of conditions to be met, she must accelerate the process of achieving reforms and aligning with norms and EU practices, including in the energy field. As a result, the Government of the Republic of Moldova initiated the drafting process of a new Energy Strategy of the Republic of Moldova until 2050, which will include calculate the results of the implementation of the Energy Strategy 2030 and evaluate the mod I criticize the ability and opportunity to achieve the objectives proposed for the sector energetically, developing a precise vision and path with defined goals and measurable for the benefit of participants in the electricity and gas markets, al energy consumers and the national economy in general. Primarily, the development of a new Energy Strategy aims to encourage key stakeholders in the energy sectors to develop a common understanding of the activities and interventions required for development sustainability of this sector. Thus, it is desired to create the necessary premises for a increase the confidence of potential international and private investors to increase investments in the national energy sector, thus supporting sustainable development of the country. 

As mentioned above, the Republic of Moldova does not has significant primary energy resources such as coal and oil, and its potential for renewable energy sources is not fully exploited. Petroleum products are imported into mainly from Romania, Belarus, Kazakhstan and Russia and has no oil storage infrastructure. These factors increase vulnerability to disruption risks the country's fuel supply.

The project of the Energy Strategy of the Republic of Moldova 2050 will propose for the oil sector, the evaluation of the ways to establish the necessary level of oil product stocks and the development and adoption of a technical regulation for imported fuels, in which refers to European quality standards and norms fuels consumed on the domestic market and at the same time monitoring emissions.

For this purpose, the Republic of Moldova undertakes to promote the use of renewable energy sources in transport, to develop measures to increase the electrification of road and rail transport infrastructure by subsidizing or reducing excise duties and/or VAT on electric cars and hybrids, in the use of biofuels that respects sustainability criteria, which will subsequently encourage domestic production of biofuels from waste, residues and biomass, as well as green hydrogen. All these actions and policy measures will contribute positively to the reduction of greenhouse gas emissions and to the fulfilment of international commitments.

According to the data presented by the National Bureau of Statistics for the year 2021, the residential sector (population) and the transport sector represent the largest sectors of the national economy after the consumption of energy resources from the total final energy consumption, 1,368 thousand tons of oil equivalent consumption in the residential sector and 789 thousand tons of oil equivalent in the transport sector (figure 3.2).

Analyzing the types of resources used in the final energy (2853 thousand tons of oil equivalent) consumption according to the data of the Energy Balance for the year 2021, the largest share goes to petroleum products 34%, followed by gases and biofuel products and waste with 21%, electricity 13% and thermal energy with coal have formed together 11%, (figure 3.1)

![Figure 3.1 Final energy consumption by product types in 2021 (%).](image)


Therefore, the attention of the state regarding the implementation of energy efficiency policies, first of all, must reflect on the residential sector (population) and transport.

Taking into account the realization of the international commitments assumed by the Republic of Moldova in the past ratifying international treaties or joining them, as well as harmonizing national legislation with that of a European Union and to complete the legislative framework in the field of atmospheric air quality was approved Government Decision no. 414 of 08.04.2016 for the approval of the Regulation on reducing the sulfur content of certain liquid fuels. Then, by Government Decision no. 401/2021, the Republic of Moldova has already committed to support building 410 MW of new renewable energy capacity, focusing on wind, solar and non-variable renewables such as biomass, biogas and small hydro.

However, the current pace of implementation of the adopted legislation is slow, because certain legislative provisions are conditioned by the creation of new institutions or the development of existing ones that entail the modification of already existing regulations.

Despite the turbulence generated by the Russian invasion of Ukraine and the practice of using of gas and oil supply as a pressure factor, the European energy market continues to perform the main functions and provide correct price signals to
both investors and final consumers. The European Union probably will pressure for faster implementation of new rules, setting more ambitious targets and demand a even deeper reforms of the energy market in Europe. In turn, this will determine the necessity of the Republic of Moldova to accelerate the strategic planning and development of the energy sector to keep pace with the European Union. The public authorities officially responsible for the implementation of the Energy Strategy 2050 will play a central role in this regard and will assume responsibility for the effective implementation of these actions.

Conclusions. Global fuel consumption has increased in recent decades, largely due to population growth, increased urbanization and accelerating economic development. Global daily demand for crude oil has steadily increased, for 2023, global oil demand is forecast to reach 101.9 million barrels per day, in particular, growth will be influenced by the easing of restrictions due to COVID-19 in China.

As markets continue to be increasingly volatile as a result of the war in Ukraine, there is greater pressure on governments around the world to make decisions quickly and ensure that these decisions position countries' economies for a better future.

The Republic of Moldova, as a contracting party to the Treaty on the Energy Community, is to develop a new public policy document, which will define the actions and measures expected for the energy sector. Also, the Republic of Moldova is to transpose into national legislation Regulation (EU) 2018/1999 on the governance of the energy union and climate action, one of the requirements of which is the development and approval of integrated energy and climate plans in accordance with the decision of the Ministerial Council of the Energy Community no. 2021/14/MC-EnC. The competent authorities undertake to promote the use of renewable energy sources in transport, to develop measures to increase the electrification of road and rail transport infrastructure by subsidizing or reducing excise duties and VAT on electric and hybrid cars, in the use of biofuels that will follow later on encouraging production of biofuels from waste, residues and biomass.

REFERENCES


Republic of Moldova, 246-250, art. 474.


Rapoarte de monitorizare. ANRE. https://anre.md/rapoarte-de-monitorizare-3-102?year=


