



Journal of Liberal Arts and Humanities (JLAH)
Issue: Vol. 5; No. 6; September 2024 (pp. 25-35)
ISSN 2690-070X (Print) 2690-0718 (Online)
Website: www.jlahnet.com
E-mail: editor@jlahnet.com
Doi:10.48150/jlah.v5no6.2024.a2

Russia - European Union: The energy relations and the implications of the war in Ukraine

Dr John G. Koutroumpis

Visiting Research Fellow of the University of Peloponnese

Abstract

Before Russia's invasion in Ukraine in February 2022, Russia was the main supplier of gas and oil to the European Union, and because of that most of the member states were dependent on Moscow's natural resources. First on the list of member states dependent on Russia was Germany, which has pipelines originating in Russia and supplying both itself and the industry, which is the source of the country's income, as well as several other European countries. When Russia invaded Ukraine, the European Union gradually began to impose one after another package of sanctions to limit Russia's resources, which Vladimir Putin uses to fund his war with Kiev. Beyond the sanctions, however, the European Commission has set a target that by 2030 Europe will be independent of the natural resources supplied by Russia. One of the measures taken was to sign an agreement with US to start storing liquefied natural gas in various countries in Europe, some of which have conversion plants.

Keywords: Russia, Ukraine, Natural gas, oil, European Commission, European Union

Introduction

The Russian Federation holds the world's largest proven reserves of natural gas. However, it constantly alternates with Saudi Arabia as the top oil producer. Before the Russia-Ukraine war, Moscow supplied a third of the EU's oil and gas, while exporting to East Asian markets, which are consuming more and more energy.

One of Moscow's financial advantages is its energy sector. The Kremlin has identified energy security as the primary issue for Russia's national security, particularly because recent changes in global and domestic trends have raised doubts about the continued strength of the energy sector.

The energy sector enables Russia to be able to extend its influence on its immediate neighbors. Moscow's use of energy as a lever of influence varies from country to country and is defined by its control of regional energy production (as it previously did in the oil sectors of Azerbaijan and Kazakhstan) and its control of energy transmission infrastructure.

Over the course of Russian history, the country's energy sector has periodically been strengthened and weakened. Managing this cycle has been a central element of Russia's domestic and foreign policy since the time of the Tsars.

With the European Union now wanting to wean itself off gas and oil, Russia is forced to accelerate its planning by bringing Syria and Libya under its control, thus ensuring its control of the Eastern Mediterranean. This control is completed by the restoration of Russian influence in Libya and the promotion of General Haftar to the helm of the country.

Essentially, the Russian plan is to expand into Libya's energy facilities, where after decades of suffering under the Western embargo, to give its energy sector the boost it needs to become a competitor to "Western" energy interests in the rest of the Eastern Mediterranean (Egypt, Israel, Cyprus, and possibly Greece).

In conclusion, the aim of this research is to show the relations between the European Union and Russia before the war in Ukraine, and how Europe dealt with the issue of energy sufficiency after the invasion of the Russian Federation. Seeing Europe imposing one package of sanctions after another, Moscow has already started to cooperate with China and India, accelerating its strategic plan to expand to Asia.

Methodology

This research aims to show the economic and geopolitical change in energy relations brought about by Russia's invasion of Ukraine. This is achieved by presenting statistical data showing Russia's exports and supply of gas and oil to the European Union.

Apart from statistical data, this study mainly uses secondary sources to be able to achieve the best possible result.

The theoretical tools that will be used in the research are political realism and in particular the aggressive realism that underlies the expansionist plans of Russian diplomacy in terms of oil and gas trade with other EU countries. Furthermore, there will also be an investigation into whether trade in Russian energy products continues with countries that have imposed sanctions on Moscow.

The study is expected to show the extent of Russia's dependence on EU member states before and after the war in Ukraine, and the efforts EU has made to finally wean itself off Russian gas. So, the behavioral perception of leaders will be investigated therefore Jervis' theory will be used. Furthermore, Allison's theory of the decision-making process will also be used.

To understand why Putin chose to formulate Russian foreign policy based on the energy expansion in Europe, we are going to use the theory of Heartland and Rimland developed by Spykman and Mackinder.

Chapter 1: Russian Energy Strategy

The collapse of the Berlin Wall in 1989 and the dissolution of the Soviet Union are two of the key events that brought about radical changes in political and economic relations in Eurasia. In addition, they managed to affect energy trade and diplomacy throughout the region.

In 1999 a document¹ was published which constituted Russia's strategy and its relations with the EU. In fact, it stated that Europe's relations with Russia should be developed on the basis of a multipolar system, with Russia being one of the poles.

A key objective of the Russian energy strategy was to intercept the European market from exploiting Caspian resources, which would allow Europe to bypass the Russian pipeline network and thus reduce Russian influence.

Although during Vladimir Putin's first term of office there was ground for cooperation with the West, this strategy came to an end by 2004. His perception changed because he wanted Russia's image to be like Europe's and for this reason he suspended all signed agreements.

The three pillars of the Russian energy strategy

1. The state to regain control of the energy sector by dismantling private companies.
2. Gain absolute control of gas production for domestic consumption and export to Europe.
3. Dominate the European market by eliminating competition and controlling deliveries, while expanding export points

¹ Christer PURSIANEN: (2007) 'Theories of Integration and the Limits of European-Russian Relations', Paper presented at the International Studies Association Convention, USA, March 1, p.8.

Regarding foreign policy

About the decision-making process and relations between Russia and the European Union before the invasion of Ukraine²:

- 1) Greece and Cyprus are the states that defend Russian interests in the European system
- 2) "Strategic partners»: Germany, France, Italy and Spain that have a special relationship with Russia that very often undermines common EU policies.
- 3) "Friendly countries»: Austria, Belgium, Bulgaria, Finland, Hungary, Luxembourg, Malta, Portugal, Slovakia, Portugal, Slovakia and Slovenia.

On the other hand, Lithuania and Poland are among the countries that have a hostile attitude towards Moscow and have always been willing to veto any obstacles to EU-Russia cooperation.

1.1 Energy dependence of EU member states

Since the start of the war in Ukraine, EU Member States have been importing oil and gas from various supplier countries. However, before the Russian invasion, the European Union imported more than 60% of its energy consumption from third countries. Most of it was imported from Russia.

Energy dependence started to increase after the 2000s and is particularly pronounced in the gas sector, due to the gradual decline in the quantities in the North Sea gas fields. Natural gas is now one of the most used energy sources, in particular to replace coal, which causes more pollution and higher carbon dioxide emissions.

The graph below shows Europe's energy dependence on natural gas from 2000 to 2020.³

In %	2000	2005	2010	2015	2019	2020
Dependency rate (all energies)	56.3	57.8	55.7	56	60.7	57.5
Dependency rate on natural gas	65.7	69	67.8	74.5	89.7	83.6

The decreases seen in 2010 and 2020 are somewhat misleading - they correspond to the effects of lower economic growth such as the 2008 financial crisis and the Covid-19 pandemic in 2020. The rate of dependence on gas is higher and is increasing much faster from 66% in 2000 to 90% in 2019.

1.1.1 Member State Dependency Levels

In order to better understand the EU's dependence on Russia, it was preferred to categorize Member States into Low Dependence states, for those importing 0-25% of oil and gas, Medium Dependence states, for those importing 25-50%, Dependent states, for those importing 50-75%, and High Dependence states, for those importing 75-100%.

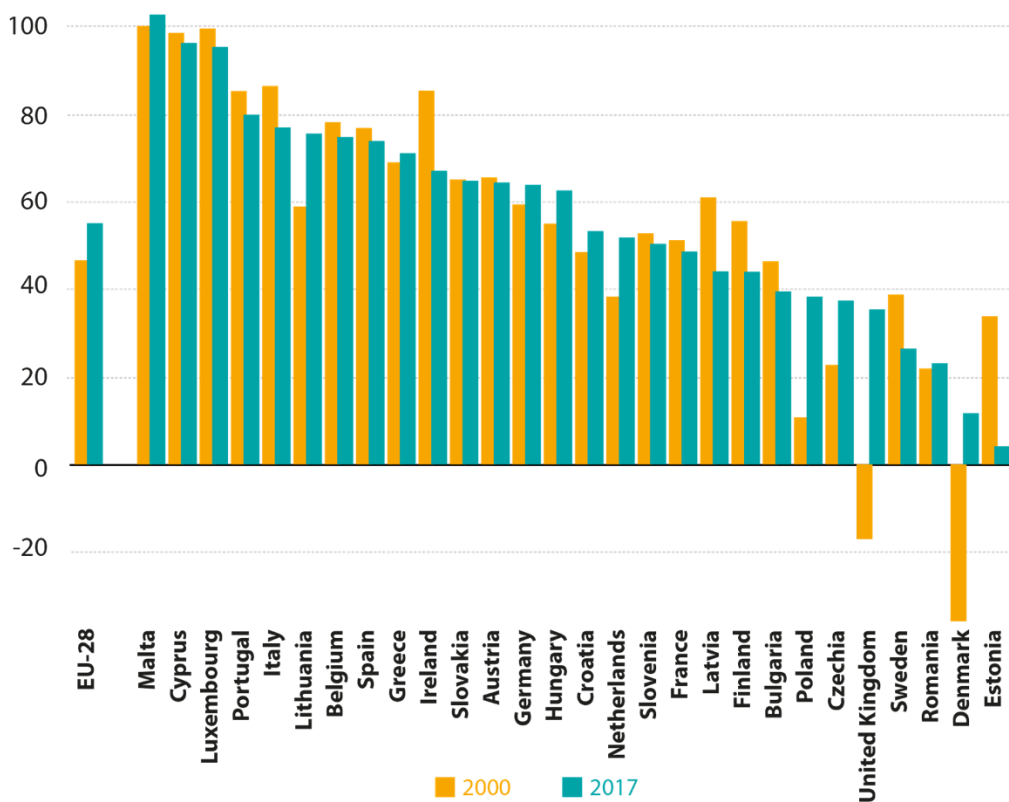
This Eurostat chart shows the dependence of EU Member States on both oil and gas in 2017⁴

² Mark LEONARD and NicuPOPESCU: (2007) "A Power Audit of EU-Russia Relations", ECFR, Policy Paper, November, p.2.

³Energy: Europe Depends on the Rest of the World <https://www.planete-energies.com/en/media/article/energy-europe-depends-rest-world>

⁴ Το διάγραμμα προήλθε από την ιστοσελίδα της Eurostat (<https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html>)

Energy dependency rate (%)



Source: Eurostat

Based on the above distinction, the table below shows the category to which they belong in terms of their dependence on Russian gas and oil.

Low Dependency	Medium Dependence	Dependent	High Dependent
Romania	Croatia	Greece	Malta
Denmark	Netherlands	Ireland	Cyprus
Estonia	Slovenia	Slovakia	Luxemburg
	France	Austria	Portugal
	Latvia	Germany	Italy
	Finland	Hungary	Lithuania
	Bulgaria		Belgium
	Poland		Spain
	Czech Republic		
	United Kingdom		
	Switzerland		

The chart below shows the dependence of five Member States on natural resources, from both Russia and other countries that export gas⁵

In %	Global energy dependency in 2020	As regards Russian gas (2020 estimates)
Italy	77.5	43
Germany	67.6	66
France	47.6	16
Poland	46.8	54
Sweden	30.2	13

Sources : EU energy in figures

Based on the percentage shown in the table, Italy is 43% dependent on Russian gas and therefore is included in the category of the medium-dependent countries. Germany, with 66% dependence on Russian gas, is included to dependent states.

Those country choose Russian gas because it is available at a low price and in large quantities and at the same time it is starting to use renewable energy sources. In April 2022 it managed to reduce its dependence on Russian gas by 40%.

Although France is 47.6% dependent on the other countries, it is 16% dependent in Russia. It has achieved this reduction because of the exploitation of nuclear energy. Poland is 54% dependent on Russian gas and is therefore included in the dependent states category.

Finally, Sweden is one of the low-dependent states, with only 13% dependency in Russian gas, and 30.2% dependent from the world market.

Chapter 2: EU sanctions and the oil embargo

Since Russia invaded Ukraine, the European Union has imposed a number of sanctions packages. To date, individual sanctions, economic sanctions and visa measures have been imposed.

The aim of the economic sanctions is to make Russia suffer heavy consequences for its actions and to effectively disrupt its ability to continue the offensive.

2.1 Individual sanctions

They have now been imposed against nearly 1800 individuals and entities in total. In June 2023, the EU imposed sanctions against an additional 71 individuals and 33 entities. The list of individuals includes:

- President of Russia, Vladimir Putin
- Russian Foreign Minister Sergey Lavrov
- the former President of Ukraine, Viktor Yanukovich

⁵Energy: Europe Depends on the Rest of the World <https://www.planete-energies.com/en/media/article/energy-europe-depends-rest-world>

- Members of the National Security Council
- Members of the Federal Council of the Russian Federation
- ministers, governors and local politicians, including the Mayor of Moscow
- high-ranking officials and military personnel
- Yevgeny Prigozhin and commanders of the Wagner Group
- prominent businessmen and oligarchs
- pro-government and anti-Ukrainian propagandists

2.1.1 The list of entities includes:

- banks and financial institutions
- financial and financial institutions, financial institutions and financial institutions, financial institutions and financial institutions
- companies in the aviation, shipbuilding and machinery manufacturing sectors
- armed forces and paramilitary groups
- political factions
- the All-Russian People's Front movement
- media organizations responsible for propaganda and disinformation
- the Wagner Group, a private military organization based in Russia
- RIA FAN, a Russian media organization

2.2 Financial sanctions

Among the sanctions imposed by the European Union are bans on imports and exports of energy products from Russia. The most important of these are the embargo on oil and refined products.

According to the European Commission, as of February 2022, the EU has banned the export of goods to Russia worth more than €43.9 billion and the import of goods worth more than €91.2 billion. This means that 49% of exports and 58% of imports are currently subject to sanctions, compared to 2021.

The list of products that cannot be imported from Russia into the EU includes, among others:

- crude oil (from December 2022) and refined petroleum products (from February 2023), with limited exceptions
- coal and other solid fossil fuels
- steel, steel products and iron
- gold, including jewelry
- cement, asphalt, wood, paper, synthetic rubber and plastics
- fish products and alcoholic beverages (e.g. caviar, vodka)
- cigarettes and cosmetics

Exemptions to the oil ban

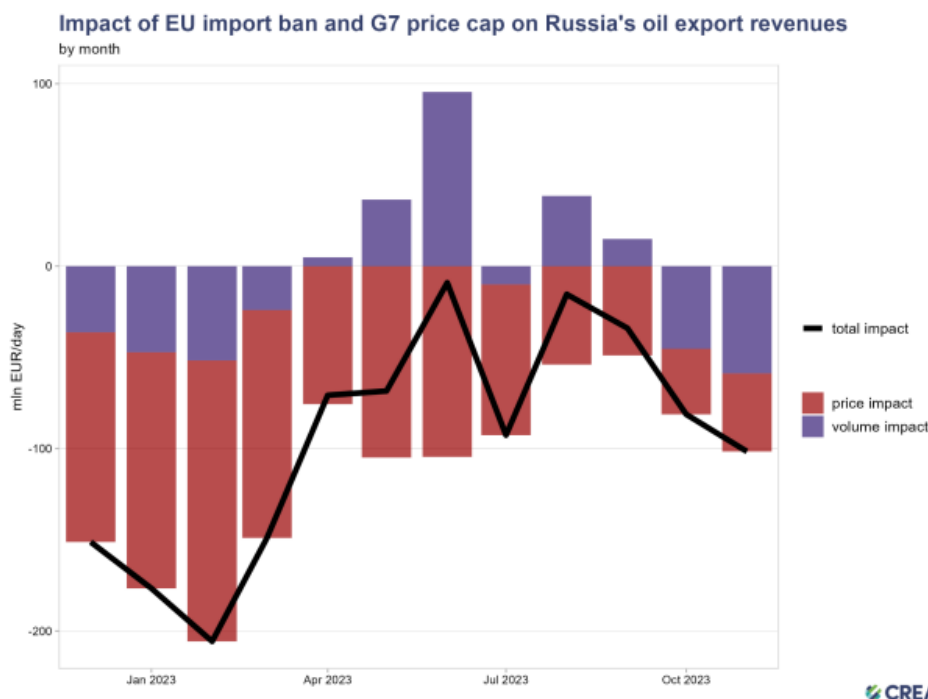
The European Council decision provides a temporary derogation for imports of crude oil by pipeline to EU Member States which, due to their geographical position, are subject to a specific dependence on supplies from Russia and have no viable alternatives.

In addition, derogations are provided for specifically for Bulgaria and Croatia with regard to imports from Russia of crude oil transported by sea and vacuum gas oil, respectively.

Chapter 3: The impact of economic sanctions on Russia

As mentioned above, the EU managed to hit the Russian economy by placing an embargo on Russian oil, but also on refined products, including fuel. In addition to the embargo, however, a cap on the maximum selling price was imposed to protect the market in the event of an explosive increase in the price of energy products.

In addition to the measures mentioned above, the EU has set a target of becoming independent of Russian energy products by 2027. Should it achieve this, then the Russian Federation's budget revenues could be reduced by 400 billion roubles.



The chart above⁶ shows the economic impact that the embargo and the price cap have had on Russian oil export revenues. These bans, when implemented, have managed to reduce oil export revenues by 14%, at a total cost of 34 billion. The cost of the export of oil and gas was reduced by 34 billion euros.

According to CREA's analysis⁷, the sanctions has affected the revenues in the first half of 2023. The first quarter recorded a peak with a loss of 180 million euros per day. In January 2023, Russia recorded a 45% month-on-month dip in total fossil fuel revenues, with only crude oil showing a 25% decline.

The failure to strengthen and consistently monitor the price cap allowed Russia to reverse the implications of the sanctions in the second half of the year. Revenue losses shrank to EUR 50 million per day in the second and third quarters and then recovered to EUR 90 million per day in the last quarter of the year.

Furthermore, one reason for the reversal of the decline in Russian revenues is the "refining window", which legally covers countries that apply sanctions against the Russian Federation to import petroleum products produced from Russian crude oil.

3.1 Which countries buy Russian Fuel?

Following the EU embargo on Russian exports, many people are wondering which countries are buying fossil fuels from Russia.

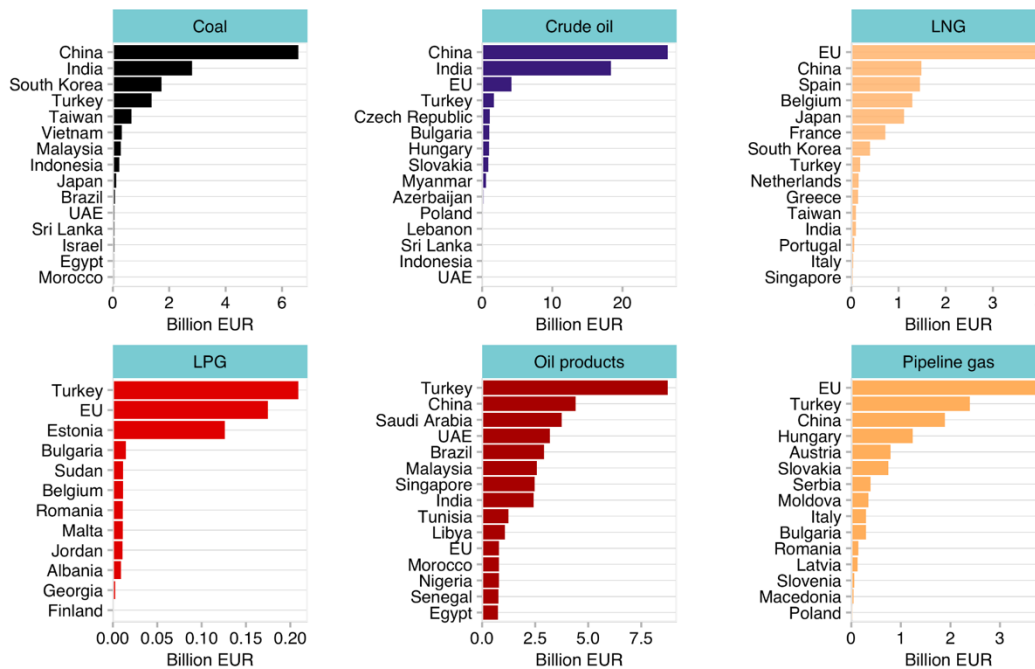
⁶ Το διάγραμμα προήλθε από πρόσφατη έκθεση του Κέντρου Έρευνας για την ενέργεια (CenterforResearchonEnergyandCleanAir) για τον ένα χρόνο εφαρμογής του εμπάργκο στο πετρέλαιο και τα διυλισμένα προϊόντα <https://energyandcleanair.org/publication/one-year-of-sanctions-russias-oil-export-revenues-cut-by-eur-34-bn/> (Πρόσβαση τον Δεκέμβριο 2023)

⁷ Έκθεση CREA (Center for Research on Energy and Clean Air) 2023, https://energyandcleanair.org/wp/wp-content/uploads/2023/12/CREA_One-year-of-sanctions_5.12.2023.pdf

The chart⁸ shows that the countries that buy the largest quantities are China and India with some exceptions such as in natural gas and LNG, where some European countries are still dependent on Russian gas and are not able to implement the EU directive.

Who's buying Russia's fossil fuels after EU bans?

Shipments arriving since EU oil bans



Source: CREA analysis based on Kpler, Marine Traffic, ENTSOG and customs data.



As for coal, since the implementation of the EU import ban on Russian crude oil (5 December 2022), China has been the biggest buyer, purchasing 46% of Russian coal exports, followed by India (19%) and South Korea (12%)

As for the crude oil, China was the largest buyer (buying 51% of Russian crude oil exports), followed by India (36%), the EU (8%) and Turkey (3%).

EU crude oil imports as of 5 December 2022 reached Bulgaria by sea and via pipeline to the Czech Republic, Slovakia and Hungary. Bulgaria has received an exemption from the ban on Russian oil imports and oil via pipeline to the EU is also not subject to sanctions.

In the LNG sector, as of 5 December 2022, the EU was the largest buyer (purchasing 53% of Russian LNG exports), followed by China (20%) and Japan (15%). No sanctions are imposed on Russian LNG shipments to the EU.

Turkey was the largest LNG buyer, purchasing 50% of Russian LNG exports, followed by the EU (42%). The EU does not sanction LNG imports from Russia.

Since the EU import ban on Russian crude oil came into force, Turkey has been the largest buyer of oil products, buying 24% of Russia's oil products, followed by China (12%) and Saudi Arabia (10%). EU sanctions on Russian marine oil came into force on 5 February 2023; oil by pipeline is only partially subject to sanctions.

The EU was the largest buyer of gas transiting through pipelines, buying 43% of Russian gas by pipeline), closely followed by Turkey (27%) and China (21%). No sanctions are imposed on Russian gas by pipeline to the EU.

⁸ The chart is taken from a CREA study based on data from Kpler, Marine Traffic, ENTSOG. <https://energyandcleanair.org/july-2023-monthly-snapshot-on-russian-fossil-fuel-exports-and-sanctions/>

Chapter 4: Europe's plan to ensure energy sufficiency

Following the embargo on Russian fossil fuels, Europe set a target of complete independence from Russian gas by 2030 due to Russia's invasion of Ukraine.

In this context European Commission, proposed in March 2022, a plan called, Repower EU⁹ and it was approved in May 2022. It aims on the one hand to end the EU's dependence on Russia's fossil fuels, which cost 100 billion a year, and on the other hand to tackle the climate crisis.

The measures foreseen in the REPowerEU plan are based on saving energy, diversifying energy supply and accelerating the development of renewable energy sources.

Energy saving

The Commission proposes:

1. Strengthening long-term energy efficiency targets including increasing the energy efficiency target from 9% to 13%.
2. Member States are also encouraged to use fiscal measures to encourage energy savings.

Diversification of supply

The EU has started to work with international partners to diversify supply and has secured record levels of LNG imports and higher returns on pipeline gas.

The Commission is also considering developing a "common market mechanism" to negotiate and conclude contracts for gas purchases on behalf of participating Member States.

The EU's external energy strategy facilitates energy diversification and the creation of long-term partnerships with suppliers, including cooperation on hydrogen or other green technologies. The strategy states that hydrogen corridors will be developed in the Mediterranean and the North Sea.

Accelerating the development of renewable energy sources

According to the Commission, accelerating the use of renewables in energy production, industry, buildings and transport will accelerate the EU's independence, boost the green transition and, over time, reduce prices.

In this context, the primary target set for 2030 for renewable energy is increased from 40 % to 45 %.

Reduction of fossil fuel consumption in industry and transport

Under this plan, the replacement of oil and gas is expected to directly reduce greenhouse gas emissions, which is the objective of the response to the climate crisis.

Energy savings, energy efficiency, fuel substitution, electrification and enhanced industrial adoption of renewable hydrogen, biogas and biometane could save up to 35 bcm of natural gas by 2030.

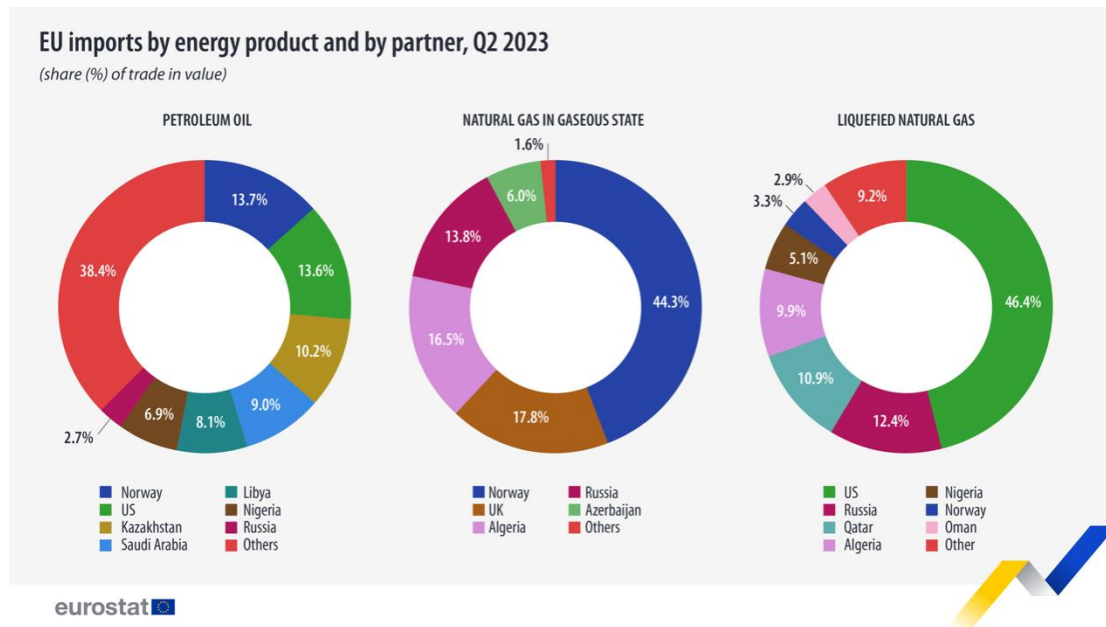
4.1 Which countries supply the European Union?

In terms of oil, the EU ban on maritime imports of Russian crude oil came into force on 5 December 2022, followed by an embargo on refined petroleum products from 5 February 2023, which affected results in the first and second quarters of 2023.

⁹ Το σχέδιο RepowerEU είναι ο οδικός χάρτης της ΕΕ για την εξασφάλιση της ενεργειακής επάρκειας και της σταδιακής απεξάρτησης από τα ρωσικά ενεργειακά προϊόντα. (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483>)

According to Eurostat¹⁰, in the second quarter of 2022, Russia was the main supplier of petroleum products, with a 15.9% share of total EU imports. In the second quarter of 2023, Russia ranked only 12th, with a share of 2.7%, down 13.2 percentage points (pp) compared to 2022.

In contrast, Norway stands at 13.7%, Kazakhstan at 10.2%, the United States reaches 13.6% and Saudi Arabia at 9.0%, while Libya has become an important partner, accounting for 8.1% of EU oil imports.



The situation was similar for natural gas, with Russia's share decreasing by 14.5 percentage points to 13.8% of total EU imports, while Algeria's and Norway's shares increased significantly. In the second quarter of 2023, Norway was the top EU supplier with a 44.3% share of total EU imports, followed by the UK (17.8%) and Algeria (16.5%).

In terms of LNG, the United States remained by far the EU's top supplier in the second quarter of 2023, with a 46.4% share of total EU imports, followed by Russia (12.4%), Qatar (10.9%), Algeria (9.9%) and Nigeria (5.1%). Among these suppliers, only Algeria and Nigeria saw their share increase compared to the second quarter of 2022. In contrast, the respective shares of the United States, Russia and Qatar decreased. Norway and Oman became important suppliers, with shares of 3.3% and 2.9% respectively.

Conclusions

In conclusion, the EU embargo on oil caused serious losses in the revenues of the Russian Federation, but the Russian economy managed to reverse its losses within six months, as, from the EU side, there was insufficient monitoring of the implementation of the measure and the imposition of the cap on the maximum selling price. On the other hand, Europe has managed to reduce its imports of Russian gas within a short period of time. As an indication, according to a Commission report, Russian gas imports will fall to 40-45 billion cubic meters this year, compared to 155 billion cubic meters in 2021, the year before the war in Ukraine.

Still, EU gas storage is 99% full¹¹, according to Gas Infrastructure Europe data, giving countries a buffer against possible supply shocks. And the expansion of solar power has contributed to a reduction in gas-fired power plants this year.

¹⁰ Eurostat Imports of energy products for the second quarter of 2023 (<https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20230925-1>)

¹¹ EU on track to quit Russian Fossil Fuels, Reuters, (<https://www.reuters.com/business/energy/eu-track-quit-russian-fossil-fuels-report-2023-10-24/>)

Bibliography

- Erica S. DOWNS: (2010) “Sino-Russian Energy Relations an Uncertain Courtship”, in James Bellacqua (ed.) “The Future of China-Russia Relations”, The University Press of Kentucky, 146-56.
- Eva Paszyc and IwonaWisniewska: (2002) “Big business in the Russian Economy and Politics under putin’s rule”, EES Studies, Centre for Eastern Studies
- Evgeny GAVRILENKOV: (2004) “Growth in Russia and Economic Diversification”, in TabataShinichiro and AkihiroIwashita (ed.) “Slavic Eurasia’s Integration into the World Economy and Community”, Slavic Eurasian Studies, No.2, Sapporo, Japan, 93-121.
- Evgeny GAVRILENKOV: (2006) “The Road to Spontaneous Diversification”, in Michael Ellman, (ed.) “Russia’s Oil and Natural Gas – Bonanza or Curse?”, Anthem.
- FarizISMAILZADE and Kevin ROSNER: (2006) Russia's Energy Interest in Azerbaijan, GMB Pub.
- Oil and Gas Articles (2006) “Russia’s Proposed Oil Pipeline Routes and Pipeline Expansion Projects” <https://oilandgasarticles.com/articles/396/1/Russias-Proposed-Oil-Pipeline-Routes-and-Pipeline-Expansion-Projects/Page1.html>
- Pedersen, J.G. (2010) “E.ON Ruhrgas In Talks to Sell Gazprom Stake”, The Wall Street Journal, 24 November <http://online.wsj.com/article/BT-CO-20101124-708514.html>
- Reuters (2007) “US Missile Shield is Provocation: Austrian Minister”, <http://www.reuters.com/article/2007/08/23/us-usa-shield-austria-idUSL2352932420070823>
- Reuters (2010) “Russia Asks EU to ensure Surgut Rights in MOL”, 3 November <http://af.reuters.com/article/commoditiesNews/idAFLDE6A20LR20101103>
- Reuters: (2011) “Nord Stream Launched: Russian Gas flows to Europe”, 13 November, Available on site <http://rt.com/business/news/nord-stream-strat-november8-769>
- RepowerEUPlan – Πρόταση Ευρωπαϊκής Επιτροπής στο Ευρωπαϊκό Κοινοβούλιο <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483>
- RIA Novosti (2006) “Russia’s Northgas Boosts Gas by 15,2% in IHO6”, July
- RIA Novosti (2009) “Gazprom Buys Controlling Stake in SeverEnergiya for \$1,6 billion” 23 September <http://en.rian.ru/business/20090923/156228505.html>
- Καραγιάννης Μάνος (2009), «Η Ρωσία σήμερα: Πολιτική, Οικονομία και Εξωτερικές Σχέσεις», Αθήνα, Εκδόσεις Παπαζήση (επιμελητής συλλογικού τόμου)
- Καραγιάννης Μάνος (2012) Οι Ενεργειακές εξελίξεις στην Ανατολική Μεσόγειο και τα Νέα Γεωπολιτικά Δεδομένα (Λευκωσία: Πανεπιστήμιο Λευκωσίας, 2012)
- Κολιόπουλος Κ.(2008), Η Στρατηγική Σκέψη από την Αρχαιότητα έως σήμερα, Εκδόσεις Ποιότητα, Αθήνα.
- Κόλμερ Κωνσταντίνος (2020), Σφαίρες Επιρροής – Η οδός της Εθνικής Ανεξαρτησίας, Εκδοτικός Οργανισμός Λιβάνη.
- Λιανός Π. Θεόδωρος (2016), Ενημερία χωρίς ανάπτυξη, Εκδόσεις Gutenberg.
- Μάζη Ι. (2002), Γεωπολιτική , η θεωρία και η πράξη, Εκδόσεις Παπαζήση.