

The Geopolitical Importance of Russian Gas

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Abstract

The relationship between geopolitics and energy security is one of the important political and academic topics. Russia ranked first as the largest reserve of natural gas in the world and second as a producer after the United States in 2021, with a production of 638.5 billion cubic meters. The revenues from natural gas exports are of geoeconomic importance to Russia's national budget and geopolitical importance to maintaining its security and dominance in its spheres of influence. Therefore, Russia has strengthened its strategy to support the country's hydrocarbon resources sector.

The study aims to reveal the relationship between natural gas and the geography of Russia by studying the size of this resource, its areas of existence, its availability, the costs of its production, and alternative transportation methods, as well as the extent of the connection between regional and global markets, in order to reach its geopolitical importance to Russia, using the analytical approach.

Keywords: Natural gas, geopolitics, pipelines, location, geoeconomics.

Introduction

Russia occupies an important place in the global energy market through its geopolitical structure (location and resources). It has the largest reserve of natural gas in the world and ranks first in its export and second in its production, which qualified it to obtain geopolitical and geoeconomic advantages to implement its external energy strategies.

Natural gas trade for Russia is one of the economic activities that has a significant impact on the process of building its political and economic power. It leads to building or defining a kind of positive relations that give it an important place between it and the different countries of the world. This affects the economic and political structure of Russia. Therefore, it has emerged as a political entity specialized in the field of gas, with a large percentage of production concentrated in it, which is greater than consumption. This contributed to being a major pole in the process of trade or economic dealings between it and the importing countries.

The research problem revolves around the fact that Russia has large quantities of natural gas. Is the size and location of its reserves, the way of production and exploitation, and the choice of the location of the pipeline a matter that stems from gaining global political and economic domination?

While the hypothesis is that the locational characteristics, gas reserve, and production of Russia have contributed to its being a geopolitical and economic power. It has also been able to achieve its gains through the practice of pipeline policies in its spheres of influence as an economic value, and an important link in building a security partner

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between the eastern and western wings from the strategic consideration of diversifying energy sources to reduce risks.

In order to reveal the importance of natural gas to Russia, the study relied on the power analysis method, through Russian statistics such as the Russian Bank, the Federal Customs Service of Russia, the British Petroleum statistical group, and the International Energy Agency.

First: The geopolitical weight of Russian gas

The geopolitical realities of Russia stem primarily from the components of political geography, including (location and resources), which determine the most important factors of strength and weakness for the Russian state. Then, these geographical data are used to determine the state's strategy, achieve its security, and defend its interests.

Russia is the richest country in the world in terms of mineral resources, especially natural gas. It has approximately 24.9% of the world's natural gas reserves, in addition to its geostrategic location, which Mackinder described as the heart of the world (heart of the earth) that cannot be reached by naval forces. This gave it the advantage of strategic location and a large area to achieve national security, and thus its self-sufficiency in the field of energy, making it one of the largest gas exporters in the world. It has become the main source of hard currency for the former Soviet Union and the current Russian Federation, and a basic means in the matter of economic development and foreign relations, in addition to giving it a major geopolitical weight in the global energy balance.

1: The relative weight of Russian gas reserves and production

Geography has imposed a distribution of natural gas that is located outside European countries and the United States. The natural gas reserve is now extended from Siberia to the Mediterranean Sea, which is the (clean energy arc). It is natural for the United States to place all its strategic attention to control the situation in these areas, except for (Russia and Iran). Therefore, it seeks to be present in the soft areas near Russia, in order to encircle it and curb its rise, in order to prevent the emergence of an alternative to the Soviet Union and to harm the interests of the United States and its allies.

First: The geopolitics of Russian natural gas reserves from the global perspective

The importance of revealing the size of Russia's natural gas reserves lies in the growing importance of this source of energy in the global energy balance in general and Russian energy in particular, as it is less polluting than oil and cheaper(1).Table (1)shows that Russia is at the top of the world's countries in terms of gas reserves, with 37.4 trillion cubic meters, representing a percentage of about 20% of the world's reserves, which is 188.1 trillion cubic meters. It thus tops all countries in the world, including the great powers and those working in the field of natural gas production, including the United States and Iran(2).

Iran ranks second after Russia with reserves of about 32.1 billion cubic meters, followed by Qatar in third place with reserves of 24.7 billion cubic meters, Turkmenistan with about 13.6 billion cubic meters, and the United States comes in fifth place in terms of reserves, reaching about 12.6 billion cubic meters(3).

Table (1) Proved global reserves of the five most important countries of natural gas for the year 2021

| %Global Reserves | Natural gas reserves trillion cubic meters | Country |
|-------------------------|---|----------------|
| % 19.9 | 37.4 | Russia |
| % 17.1 | 32.1 | Iran |
| % 13.1 | 24.7 | Qatar |
| % 7.2 | 13.6 | Turkmenistan |
| % 6.7 | 12.6 | USA |

| | | |
|--|-------|-----------|
| | 188,1 | The World |
|--|-------|-----------|

Therefore, Russia is the first power in the world in terms of natural gas reserves, and no country in the world competes with it in this regard. This has contributed significantly to the quantities of production in Russia and the level of its export capabilities of energy in the world. Consequently, it has become a geopolitical tool to achieve a network of economic and political interests, and it works to resolve hot conflict zones in Eurasia, and to dismantle the strategic containment policy of the United States.

Second: Spatial distribution of Russian gas reserves

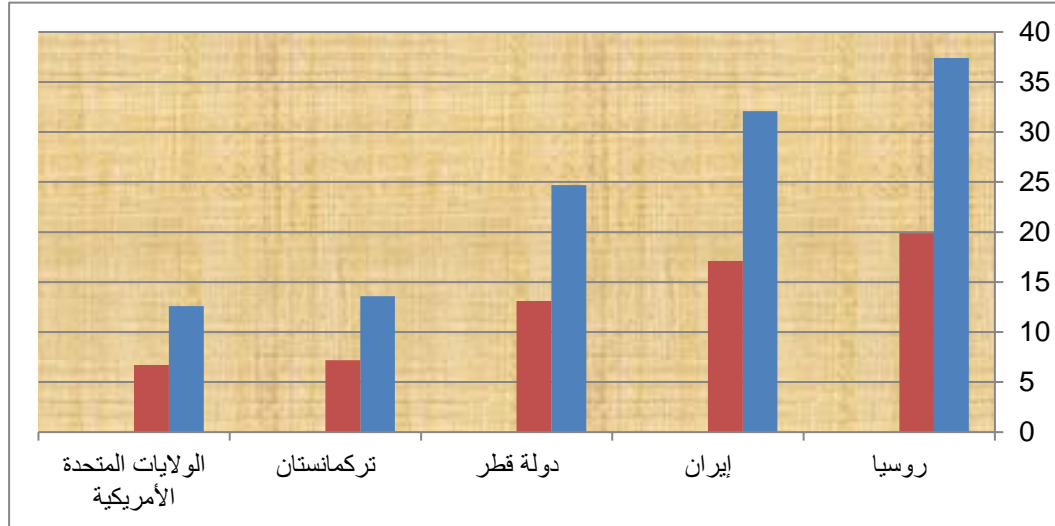


Figure (1) Natural gas reserve percentage of the five most important countries in the world 2021

Russian natural gas is concentrated mainly in Western Siberia (73%) and Eastern Siberia (7%), followed by marine areas such as the Barents Sea, the Kara Sea, and the Sea of Okhotsk. Reserves distributed on land account for 90% of the total reserve, and the remaining 10% are distributed in marine areas(4).

The gas fields of Siberia are characterized by being the widest and largest in the world. Among them are the fields of Western Siberia, which is considered the center of oil and gas production. More than 200 natural gas fields have been explored and developed in the region, including 20 fields with reserves estimated at more than 500 billion cubic meters. Eastern Siberia is another large gas region after Western Siberia. Other gas areas are distributed in the northern seas, the Volga region, the Urals, the Caucasus, and even the Far East. The peak of field discoveries began in the late 1960s and early 1980s(5).

The majority of Russian gas reserves are concentrated in the following regions:

1. Yamal-Nenets Autonomous Okrug:

This region is considered the center of the gas industry, with the vast majority of the fields currently operating in it, including the largest in Russia (the third largest field in the world). The Urengoy field is one of the oldest fields, discovered in 1966(6). It contains 1,300 wells, with gas estimated at more than 10 trillion cubic meters, rivaled only by the South Pars field in the territorial waters of Qatar and Iran. The Yamburgskoye field, discovered in 1969, is one of the fields with large reserves, estimated at about 8.2 trillion cubic meters(7). The Zapolyarnoye field is located within the borders of the region and is a gas and condensate field, with reserves of more than 3.5 trillion cubic meters. The Bovanenkovo field is the largest on the Yamal Peninsula and produces 115 billion cubic meters of gas annually and exports to China(8).

2. Barents and Kara Seas:

This region contains more than 9% of Russian gas(8). One of the most important fields in the region is the Leningrad field, which was discovered in 1992 on the eastern slope of Yamal and consists of 10 gas condensate reservoirs. Its explored reserves are about 1.05 trillion cubic meters of gas, and the group of associated fields is considered unique in Russia.

In 2019, Gazprom discovered two new fields on the Yamal shelf of the Kara Sea at the same time, and a year later added two more to them, with reserves estimated to be over 712 billion cubic meters(9). Gazprom also owns the Rusanovskoye field located in the Kara Sea, which was opened in 1992. The Barents Sea is one of the richest gas condensate fields in the world, discovered in 1988, and contains reserves of 3.94 trillion cubic meters(10).

3. Astrakhan region:

This region is located between two seas (Kara and Barents), 60 km from the capital of the Astrakhan region. This region has gas reserves of more than 4.5 trillion cubic meters. The region belongs to the Volga basin. In 2008, experts stated that over more than 20 years of exploitation of these fields, only 10% of the field reserves had been extracted(11).

4. Orenburg region:

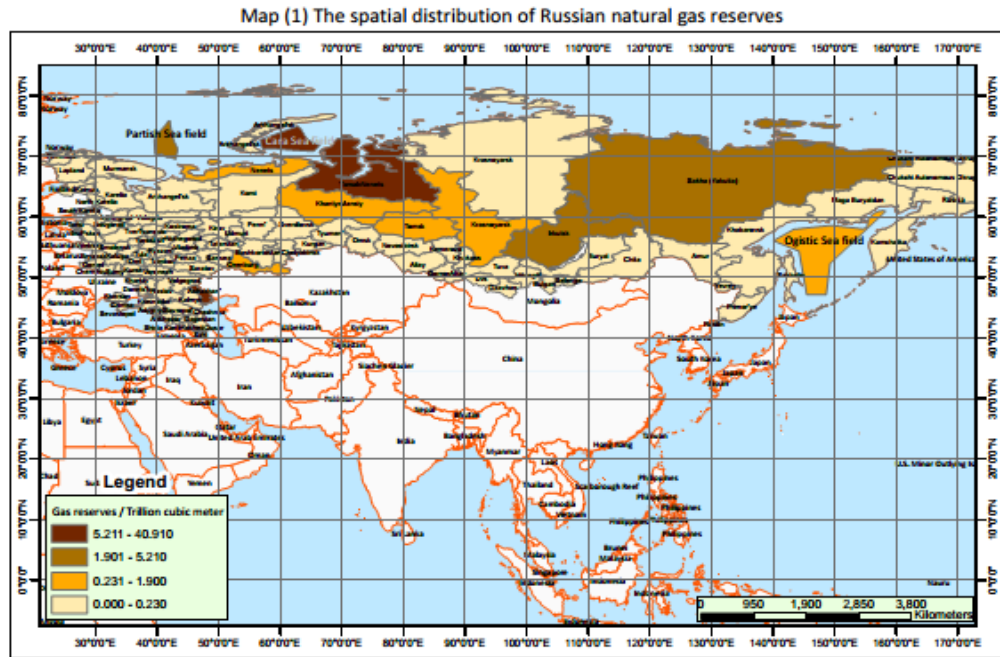
This field is considered promising. According to Gazprom, it contains a reservoir of more than 640 billion cubic meters of gas in the oil and gas condensate field, which is comparable to the reserves of new fields. It is one of the largest fields located outside the Western Siberia region(12).

5. Republic of Sakha:

This is the largest administrative unit, and its vast area is coupled with large quantities of gas. The gas field of Sredniy Botuobinskiy has reserves of 181 billion cubic meters, the field of Sredniy Tungusskoye 156, and Sredniy Vilyuiskoye 149 billion cubic meters. The Chyandinskoye field occupies an important place in the list of Sakha fields, with reserves of more than 1.2 trillion cubic meters. It is scheduled to become the basis for projects implemented by Gazprom, namely the formation of the Yakutsk gas production center and the operation of the Power of Siberia gas pipeline, which passes through the territory of Yakutia to the Amur region, and then to China and the Far East(12).

Table (2) Spatial distribution of the size of gas reserves in Russia

| The quantity (trillion cubic meters) | Area |
|--------------------------------------|---|
| 40,9 | Yamalo-Nenets Autonomous Okrug (Yamalo-Nenetsky District) |
| 4,8 | Barents Sea |
| 7,3 | Kara Sea |
| 1,9 | Krasnoyarsk Krai (Krasnoyarsk Territory) |
| 2,9 | Sakha (Yakutia) Republic |
| 4,2 | Irkutsk |
| 1,5 | Sea of Okhotsk |
| 5,2 | Astrakhan |



From the above, we conclude that Russia has enormous potential in terms of natural gas reserves, which contributed to the implementation of its policy, which included interrelated objectives to maintain its share in existing gas markets, prevent competition from other suppliers, achieve commercial and political gains that should lead to geopolitical interests and security. By virtue of the geographical location of the reserve, it can produce and export gas not only to traditional markets such as the Commonwealth of Independent States and Europe, but also through the reserve, it can meet the demand from Asian markets such as China, South Korea, and Japan. This means that Russia has geopolitical power thanks to the gift of geology (location) and geography (location), as well as the continuation of geological exploration and large investments in order to maintain its position and influence in the global natural gas market and the economic and political arena in the world.

Geopolitical weight of Russian gas production

There have been transformations in the Russian strategy from relying on military and political power to a strategy of securing its international position and shifting to natural resources, especially natural gas, as a political and economic means, and an important way for economic development and external relations. This made its production and increasing importance as an important source in the global energy balance in general and the Russian energy balance in particular, as well as controlling the size of the sphere of influence (consumption markets) for exports compared to competing countries.

90% of Russian natural gas production is concentrated in the main gas region, which is the Yamal-Nenets Autonomous Okrug region. It forms the heart of the producing country and includes the largest number of high-yield fields, with a total of more than 582.6 billion cubic meters, followed by the Okhotsk Sea region with 29.2 billion cubic meters and the Kara Sea with 18 billion cubic meters.

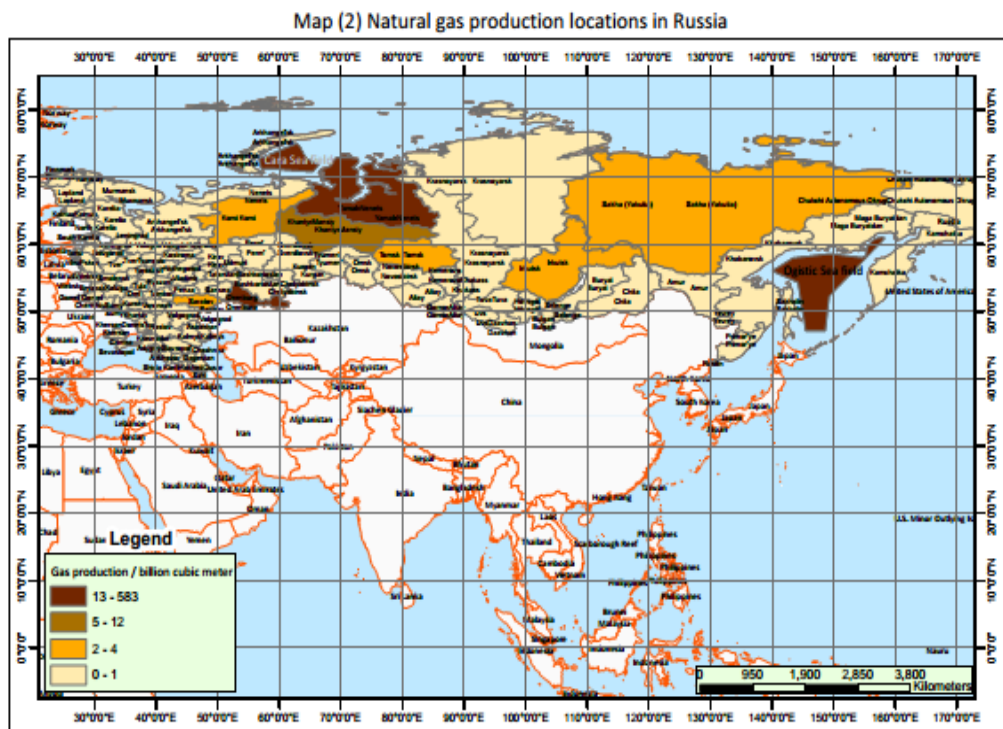
Table 3: The most important natural gas production areas in Russia

| Production | Area |
|------------|-------------------------------|
| 583 | Yamal-Nenets Autonomous Okrug |
| 29,2 | Okhotsk Sea |
| 18 | Kara Sea |
| 14 | Orenburg |
| 12,2 | Okrug Khanty-Mansi – Yugra |

The first production area has the lowest percentage of impurities, and extracting it from the production stage to consumption requires simple production processes that are ready for export. This has provided Russia with better geopolitical and economic conditions to implement its energy diplomacy strategy. Russia has a unique mechanism that makes production and the huge transportation conditions through pipelines from Russia a dominant player in the world's natural gas resources.

The second and third production areas contain a large percentage of impurities and require large purification processes to refine them. This means that they have a higher production cost compared to the first production area(13).

We conclude that the location of production for Russian gas, the method of exploitation, and the choice of the location of the pipeline are a source of power in gaining political and economic dominance, and affect the interaction and relations with countries.



The gas industry is of strategic importance to the Russian economy and has determined its international specialization and then its geopolitical weight, in a way that serves its dominance in the global energy market. It occupies a leading position in global production, and this large position is due to the large reserves it has of this important resource. It is first in the world in terms of reserves, and second in the world in terms of natural gas production after the United States of America(14). From Table (4), we note an increase in global production, reaching 3676 billion cubic meters for the year 2017, to reach 4036 billion cubic meters for the year 2021. This is related to the qualities that gas

is characterized by, as it is environmentally friendly, as well as its low impact on the climate compared to fossil energy sources such as coal and oil.

| The United States (percentage) | Russia's production (percentage) | The total global production | Russia Production | Year |
|--------------------------------|----------------------------------|-----------------------------|-------------------|------|
| %20,3 | %17 | 3673 | 635.6 | 2017 |
| %21,8 | %17 | 3851 | 669.1 | 2018 |
| %23,3 | %17 | 3967 | 679.0 | 2019 |
| %23,7 | %16,5 | 3861 | 637.3 | 2020 |
| %23,1 | %17 | 4037 | 701.7 | 2021 |

As for Russia, its production reached 635 billion cubic meters for the year 2017, with a percentage of 17% of global production, which increased to 701.7 billion cubic meters for the year 2021, with a percentage of 17%. The United States of America ranked first in terms of production quantities, reaching 940 billion cubic meters, with a percentage of 23.2%.(15).

As mentioned, Russia's production is more influential and dominant in the global gas market. This is related to the stability of Russian production due to its large reserves and wide production, which are two essential conditions for gaining the trust of consuming countries. In addition, the main gas supplier is Gazprom, the largest global producer, which is controlled by Russia.

The United States, which ranks first in global production, has seen an increase in production due to the shale gas revolution, which has led to a surplus in its domestic market. This could superficially compete with Russia for market areas and influence, leading to lower Russian gas prices and a reduction in its share. However, it has failed to displace it as a geopolitical player, as the geography of mature pipelines and stable Russian gas sources have a significant impact on consuming countries. The European Union and Asian countries are also well aware of the risks of putting all their eggs in one basket, and they refuse to be unilaterally linked to the United States.

Second: The geo-economic importance of Russian gas exports

Russian natural gas exports account for about a quarter of global total exports. This makes it one of the most influential exporting countries at the global level. It is also linked to global energy markets and can change the balance of energy in its favor. It can also make natural gas a political card that plays an important role in resolving regional and international political and economic issues. This gives it an important geopolitical weight.

1. The place of natural gas in Russian exports

Russia considers natural gas to be the core force for revitalizing its economy and national security. Therefore, it uses its advantages in the energy sector to increase its influence in regional and global affairs. It has strengthened its position in this energy through transnational investment projects such as natural gas exploration and pipeline construction. This has made it a powerful player that has made it the dominant force in Europe. This is the strategic diplomatic basis of the Putin government to build energy power(16).

The value of Russian exports in 2021 was \$491 billion, of which \$55.526 billion was the share of natural gas, representing 11.2% of total Russian exports. Compared to 2020, which was the year of the spread of the Corona virus, Russian exports increased to \$337.295 billion, of which only \$25.682 billion was the value of gas exports, and its contribution was only 7.6%. This is the lowest percentage of gas in Russia's total exports since 2000(17).

Table 5: The value of natural gas exports to Russia's total exports

| The percentage contribution of gas to total Russian exports | Total Russian exports of goods | Russia's gas exports | Year |
|---|--------------------------------|----------------------|------|
| % 10.8 | 357,262 | 38,660 | 2017 |
| % 11 | 450,278 | 49,752 | 2018 |
| % 9.7 | 424,261 | 41,460 | 2019 |
| % 7.6 | 337,295 | 25,682 | 2020 |
| % 11.2 | 493,096 | 55,526 | 2021 |

Russian gas exports increased by 2.2 times, or about \$29.8 billion, to reach \$55.5 billion in 2021. This was due to a 2.1-fold increase in export prices. LNG exports grew by 9% in 2021, or \$0.6 billion, driven by a 12% increase in export prices with a 3% decrease in physical volumes(18).

The total sales of Russian gas exports from 2017 to 2021 exceeded \$200 billion. This represents the spirit of the Russian economy, as it is a permanent source of income for the state treasury and a major contributor, as its share does not fall below 10% as a percentage of all years. As a result, it has become a geopolitical indicator of Russia's power, as it guarantees a large share of the state budget and its sales from a commercial source that is witnessing a significant increase due to the growing global demand.

2. The share of Russian gas exports in total global gas exports

The Russian natural gas market is not subject to the pressures of rising prices in the global markets because of its regularity and low costs. As a result, it continues to maintain its position and international weight(19).

Table 6: Total Russian gas exports to total natural gas exports

| %of total global trade | Total global gas trade | Russian exports Billion cubic meters | year |
|------------------------|------------------------|--------------------------------------|------|
| 26 | 902.0 | 235.2 | 2017 |
| 26.3 | 939.7 | 247.3 | 2018 |
| 26.2 | 991.6 | 259.8 | 2019 |
| 25.2 | 944.3 | 238.9 | 2020 |
| 23.6 | 1021.9 | 241.3 | 2021 |

In 2021, Russia's total exports were about 241.3 billion cubic meters, which represents 24% of global exports of 1021.9 billion cubic meters, Table (6). This was down from more than 26% of global gas trade due to the measures and sanctions taken by the United States and European countries. Meanwhile, US exports were 137.5 billion cubic meters, or 11% of global exports, ranking second after Russia.

Characteristics of the Russian gas market

The Russian gas market is characterized by the following: It is a seller's market, with a few large companies controlling the supply.

It is a buyer's market, with a large number of countries competing for Russian gas.

Russia imports natural gas from Central Asia, primarily to meet domestic demand. Russia uses its gas exports to increase its influence in Central Asia. Russia uses its gas exports to increase its influence in Europe.

3. Geopolitical dimension of Russian gas export lines and directions

Natural gas is a regional commodity, more than it is an international commodity. This is because it is most efficiently distributed to nearby countries.

The competition for natural gas pipelines has become a form of international competition. Russia has built a number of these pipelines to enhance its position and dominance in the global energy market. This is based on the view of Ratzel that a state must expand its borders in order to compete regionally and globally(20).

Table 7: Percentage of Russian and world gas exports via pipelines 2017-2021

| %of global pipeline exports | Worldwide Gas Exports by Pipeline | %of Russian Gas Exports | Russian Gas Exports by Pipelines | Russian Gas Exports | Year |
|------------------------------------|--|--------------------------------|---|----------------------------|-------------|
| %43 | 508,7 | % 93.4 | 219.7 | 235.2 | 2017 |
| %43,6 | 509,3 | % 89.9 | 222.4 | 247.3 | 2018 |
| %43,5 | 507,5 | % 84.9 | 220.7 | 259.8 | 2019 |
| %43,4 | 404,1 | % 82.5 | 197.1 | 238.9 | 2020 |
| %39,8 | 505,6 | % 83.5 | 201.7 | 241.3 | 2021 |

As shown in table (7), Russian gas exports through pipelines account for about 84% of its total exports, which amounted to 241.3 billion cubic meters in 2021. This means that it relies heavily on pipelines to transport natural gas. Therefore, any disruption to these pipelines would pose a major threat to Russian gas trade, especially as more than 80% of pipeline gas exports are destined for the European Union.

The above confirms the strength of Russian gas exports through pipelines and its role in the global gas market, as it accounts for about 40% of total global gas exports through pipelines in all different countries of the world. At the same time, due to the geopolitical situation in the gas trade areas, especially the European Union and the situation created by the Ukraine events, there is a slight decline in Russian gas exports through pipelines over 10 years. It was 45% in 2011 and declined to 39.8% in 2021. This is due to the Ukraine events in the first place, and the restrictions imposed by the European Union on Russian gas trade in the second place. Despite the strategic containment and economic sanctions imposed by the United States and NATO, Russia's dominance over gas supplies to Europe has not been shaken. This gave those lines a geopolitical dimension for gas and a place for Russian national security. The directions of gas pipeline exports are divided into:

First: Russian gas export pipelines to Europe and their geopolitical importance

Due to the special geographical conditions of Russia, which connects Europe and Asia, it has used pipeline diplomacy as an alternative to military force to achieve its interests. Its energy strategy is strongly influenced by geopolitics and the impact of the geo-economic structure. The degree of development and construction in the western region is much greater than the eastern region, as it is more suitable for contact with the outside world. This makes the historical interaction between Russia and the countries of Western Europe closer than Japan and China on the eastern side due to geographical barriers such as deserts, mountains and oceans. Therefore, the establishment of energy transmission pipelines has been directed westward to Europe to achieve geo-economic and geopolitical goals. With the depletion of North Sea reserves, the decline in coal-fired power generation, and limited investment in nuclear energy, the importance of natural gas continues to grow and has become the main element in building Russia as a strong country to achieve its geo-political interests and expand its influence. This is confirmed by the fact that most of Russia's exports to the European Union in 2021 accounted for about 40% of Europe's imports of natural gas. During the Cold War, the Friendship (1964) and Brotherhood (1968) gas pipelines were built through Ukraine, the Union (1978) and the Arctic (1969) pipelines from Belarus and Ukraine to Poland, Latvia and Lithuania. In order to diversify the methods of trading natural gas, so that the geo-economic and geopolitical position of this source is not linked to the policies of transit countries, Russia continued to promote the construction of pipelines that pass through countries other than Ukraine. In 1997, the Yamal-Europe pipeline was completed through Belarus. There are

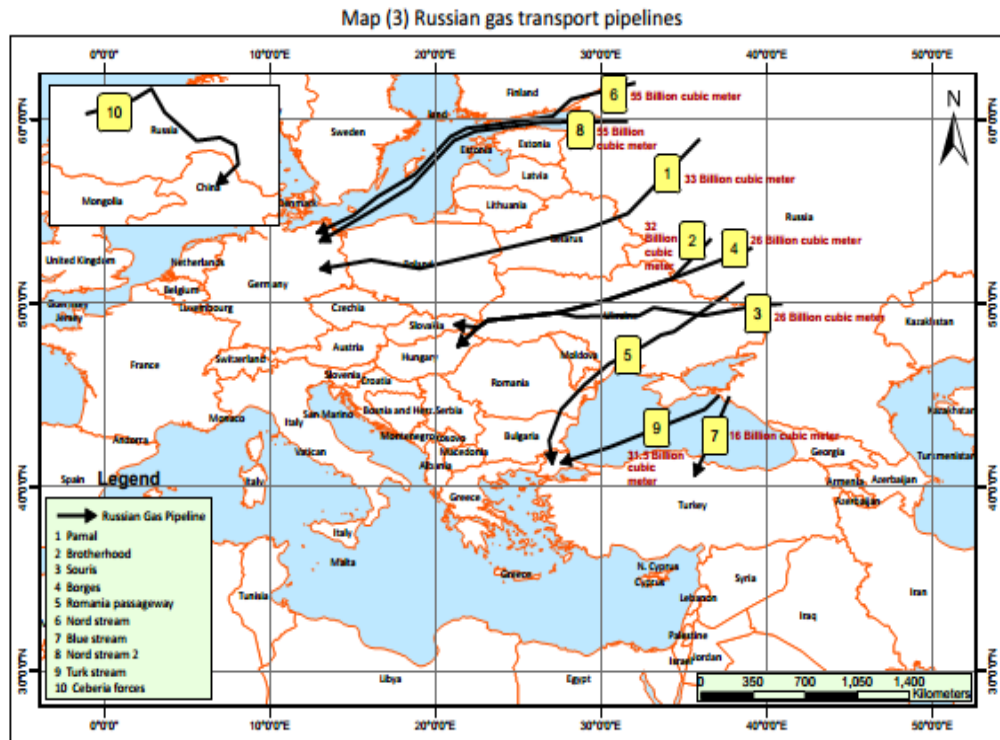
different views on the reasons for reducing dependence on this line. Western European countries believe that Russia uses gas for political reasons to put political pressure on these countries, similar to the events taking place in the region. Russia, on the other hand, explains the reason by saying that the European countries located on this line did not book any gas quantities during the previous period. (21) In 2005, the Blue Stream pipeline was completed, which supplied gas to Romania and Bulgaria through Turkey. In late 2011, the Nord Stream pipeline was launched through the Gulf of Finland and the Baltic Sea, directly from Russia to Germany. It aims to increase natural gas supplies to the European market, reduce costs and dependence on transit countries and countries. The ongoing conflict with Ukraine led to the construction of this line to reduce Russia's dependence on transporting its supplies to the most important European markets directly and without the need for transit countries that have long been a major gap in Russia's energy security. It allows Russia to diversify its supply routes and reduce transit costs. On the one hand, it reduces the risk of energy supply disruptions to Europe. It is also a tool of Russian power, as well as a tool to punish transit countries that have caused problems in the transportation of Russian gas. It also contributes to maintaining political influence in Russian-European relations.

In 2018, Russia and Turkey jointly built the TurkStream pipeline, which enters Turkey through the Black Sea and extends to Bulgaria, Serbia, Hungary and Austria, in order to reduce dependence on Ukraine and reduce competition for gas producers in the Caspian Sea region (22) Table (8), Figure (2) and Map (3).

Table 8 Russian pipelines, amount of exports and consuming countries 2021

| Consuming Countries | Transported Gas | Transit | Destination | Capacity | Pipe |
|--|-----------------|-----------------------|---------------|---------------|-------------------|
| Germany | 58.1 | across the Baltic Sea | Germany | 55 | Nord Str |
| Bulgaria, Greece, North Macedonia, Romania, and Serbia | 12.1 | Turkey | Turkey | 15.75 | Turk Str |
| Germany and Poland | 26.5 | Belarus | Belarus | 33 | Ya |
| Slovakia, Hungary, Romania, and Poland | 37.5 | Ukraine | Ukraine | More than 100 | Ukr |
| Baltic states | 4.3 | Latvia | Baltic States | 10 | Baltic st and Fin |
| Turkey | 15.98 | Across the Black Sea | Turkey | 16 | Blue Str |
| China | 10.39 | China | China | 38 | Serl Po |

The European Union is considered the largest importer and consumer of gas in the world, with annual demand reaching 480 billion cubic metres. Self-produced gas in the European Union represents only 30%, and most of the natural gas must be imported from abroad. Russia is the largest exporter of natural gas in the European Union, as it represents 43% of European Union imports. The European Union is also the largest market for Russia's exports. In 2019, Russia exported 236.9 billion cubic meters of gas, of which 192.6 billion cubic meters were exported to Europe, at a rate of 81%, which confirms that despite the differences Between Europe and Russia on the geopolitical level, they have a close relationship in the field of natural gas trade and a high degree of mutual dependence.(23).



• Consultative Center for Studies and Documentation, European gas map between Russia and alternative sources, Issue 29, May 2022, p. 9.

In 2017, Russia's exports to the European Union amounted to 193 billion cubic meters, of which pipeline exports accounted for approximately 88%. In 2021, Europe's natural gas production was 218.6 billion cubic meters, and consumption was 553.5 billion cubic meters, a gap of 334.9 billion cubic meters. Russian exports via pipelines amounted to 167.0 billion cubic meters and 17.2 billion cubic meters of liquefied natural gas, for a total of 184.9 billion cubic meters, which represents 32.9% of total European imports. Therefore, the issue of the implementation of American and European sanctions on Russia has economic implications for Europe. The storage of gas by European countries is not an easy task, but it has cost the budgets of European governments 70 billion dollars. It is also almost certain that the euro zone, along with Britain, will enter a state of economic recession, with inflation among European countries reaching 9%, a figure four times higher than the rate set by the European Central Bank at 2%. The International Monetary Fund announced that the four largest economies, France, Germany, Italy, and Spain, will achieve a lower growth rate than expected by the end of 2023(24). We conclude from the above that Russian gas pipelines have two goals: the first is geopolitical and the second is commercial. The geopolitical goal is to facilitate Russian military operations in Ukraine and Belarus, and to isolate Germany politically from the European Union and the United States. European demand for energy is still strong, and Europe's imports of natural gas will increase by more than 10% in the future if Norway's gas production continues to decline.

| %of pipeline exports | %of the rest of the world, including the Commonwealth of Independent States (CIS) | %of total pipeline exports | exported to the European Union | Russia's gas exports | Year |
|----------------------|---|----------------------------|--------------------------------|----------------------|------|
| % 12 | 26.5 | % 87.9 | 193.2 | 219.7 | 2017 |
| % 13 | 29.2 | % 86.8 | 193.2 | 222.4 | 2018 |
| % 13.2 | 29.2 | % 86.6 | 191.3 | 220.7 | 2019 |

| | | | | | |
|--------|------|--------|-------|-------|------|
| % 13.3 | 26.3 | % 84.6 | 166.9 | 197.1 | 2020 |
| % 13.4 | 27.1 | % 82.7 | 167.0 | 201.7 | 2021 |

Based on data from the BP Statistical Review of World Energy 2022, 71st edition

Exports from the Netherlands and the United Kingdom were almost zero, and the infrastructure for liquefied natural gas in Europe is underdeveloped, and the cost of shale gas production in the United States is high, making it difficult to fill the demand gap. Therefore, Russian pipelines are the best option for Europe. This gives Russia the most important strength because it is connected to Europe through a set of pipes that can pump large quantities of gas, so it can meet most of Europe's gas needs in a short time and at a lower cost than other sources.

Exporting gas to Asia

Russia's geostrategic location has enabled it to diversify its gas export supplies, which is the best weapon against external shocks. Consumer markets in Asia are another vital area that reflects the geopolitical importance of Russia, as it can use them as an alternative when it faces a blockade or sanctions from European countries, which are originally intended to reduce its supplies. As a result, Russia turned to Asian countries to sell its production, in addition to reducing the dependence of those markets on American and Qatari shale gas, through a gas pipeline that extends from Russia to China. The Eastern Siberia (Power of Siberia) pipeline, which transports gas from Yakutia to Primorsky Krai and the Asia-Pacific region, is a joint project between Gazprom and China's CNPC. It was opened in 2019, with a length of 2159 km, a pipe diameter of 1420 mm, and an export capacity of 38 billion cubic meters of gas per year.

The pipeline confirms that Russia has a large commercial background in addition to the European front line. It has worked with China to strengthen relations by canceling the tax on the exploitation of natural gas exported to China, and the latter announced that it is ready to cancel the import tax, which means exceeding the commercial value and achieving geopolitical goals.

The additional benefit of Russian-Chinese cooperation comes from the unique local quality of the gas fields in eastern Siberia. They are rich in components, such as propane, butane, ethane, and especially helium, and the price of helium is 10 to 30 times the price of natural gas. Russia and China can cooperate to separate these elements and obtain higher profits. In 2021, Gazprom delivered about 10.39 billion cubic meters of gas to China through this line, and it plans to increase exports from this line to about 22 billion cubic meters in the future.

On December 21, 2022, the second section of the Power of Siberia gas pipeline with a length of more than 3.0 thousand km was put into operation(25).

Russian-Chinese cooperation is part of building a multipolar world system, as a tool for Russia to exert pressure on the areas of influence of its rivals. It can also assure the West that it will not rely entirely on the European market, and that its cooperation with China can establish a more balanced geopolitical relationship in the world, especially in Eurasia, and that it trusts it as a geopolitical partner in times of trouble.

Conclusions

1- Russia is the world's leading gas exporter by virtue of its possession of the largest amount of global gas reserves. It has built its economic power on this, and it has become its main tool in its foreign policy, especially in its relations with neighboring European and Asian countries.

2 - Russia has a well-established network of pipelines that connect it to European and Asian countries. These pipelines contributed to the export of 167 billion cubic meters of

gas in 2021. Russia sees increasing European dependence on Russian gas as a geopolitical necessity, making gas a central pillar in Russian-European and Russian-Asian geopolitical and geo-economic relations.

3 - The flexibility of the diversity of Russian gas in consumer markets. The decline in flow to European markets is compensated by increasing flow to Asian markets.

4 - Russian gas controls global markets and areas of influence. Although the United States is the world's leading gas producer due to shale gas technology, its weakening is achieved through a price war due to its high costs compared to Russian natural gas.

5 - Russian gas pipelines have geopolitical and geo-economic dimensions, which have spared them any political pressure that could have been exerted by transit countries, in addition to avoiding the transit costs that Russia used to pay.

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