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## Poland's Energy Diplomacy - The Antithesis to Antagonistic Global Energy Actors

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## Poland's Energy Diplomacy - The Antithesis to Antagonistic Global Energy Actors

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### Abstract

The global energy market has witnessed numerous superpower competitors attempting to use the weaponization of energy trade or aggressive Energy Diplomacy to impose energy economic dominance. As an antithesis to this antagonistic strategy, Poland has risen to demonstrate the model to repress this aggressive diplomatic approach to gain energy diversification and stimulate its national productivity. Poland's revamped Energy Diplomacy founded on the diversification of energy imports, competitive strategy in the global energy marketplace, and resounding economic and energy alliances with the Former Eastern Bloc Countries has served as an international model for national prosperity and map to energy independence. Through the Porter's diamond model, it can be demonstrated how Poland has been able to exploit its attributes to include factor and demand conditions, supporting industries, and firm strategy to make itself independent and to introduce a counterstrategy against Russia and China's weaponization of energy diplomacy.

### Keywords

Energy, Security, Diplomacy, Poland, Weaponization

## Introduction

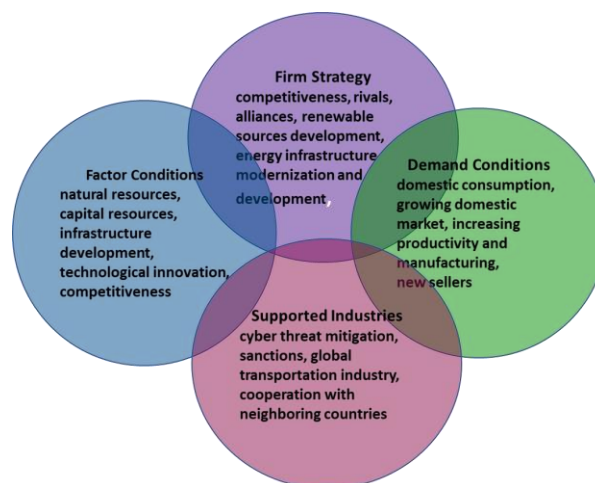
In the globalization and post-COVID 19 era, new laws of global commerce, supply chain diversification, and economic prosperity will be written. In the context of global prosperity, the production, transport, market, and consumption of energy serves as the cornerstone to sustain the world populace. The global energy market has witnessed numerous superpower competitors attempting to use the weaponization of energy trade or aggressive Energy Diplomacy to impose energy economic dominance. Facing the beacon of this antagonistic global energy market diplomatic sphere, Poland has risen to demonstrate the model to gain energy diversification to stimulate its energy prosperity.

Over the past three decades, there have been many political and economic changes in the Republic of Poland. The collapse of communism, the accession to NATO and the European Union as well as the Ukrainian-Russian crisis have shaped Poland's revamped Energy Diplomacy and Policy. Although Polish natural resources currently are not sufficient to grant consumers the required energy sources for the functioning of the community, Poland has invested in industrial policies, international development, and infrastructure to maximize its energy independence.

That said, Poland should continue to develop industrial infrastructure, diversify suppliers, and seek new energy alliances to reduce dependence on a single supplier, which is a threat to the country's economy.

## 1. Polish Porter's Diamond

Poland's Energy Diplomacy can be shown through a Porter's Diamond of national advantage. Using that model in the article, it can be demonstrated how Poland has been able to exploit its attributes to include factor conditions, demand conditions, supporting industries, and firm strategy to independent itself and introduce a counterstrategy against Russia and China's weaponization of energy diplomacy [1].



**Figure 1:** Porter's Diamond – Poland National Diamond

This study will analyse Poland's natural resources acquisition strategy and vision for energy diversification. Poland becoming dependent on one supplier, Russia, due to its lack of domestic natural resources and production capacity, is a threat to its energy security.

The article seeks to evaluate how Poland's energy diplomacy concentrated on energy diversification and innovation to become a regional economic power. This study will review the structured analysis of quantitative data related to Poland's energy consumption, natural resources, and international cooperation to meet its energy consumption needs. The results of this research found that although it has not manifested itself, Poland has secluded itself from its Russian energy dependency. Therefore, this article uses Poland as an example for diplomatic economic model for energy-dependent nations to develop national economic resiliency based on legal regulations, infrastructure development, and alliances contracts for the supply of natural resources. Finally, this study will explain Poland's Energy Diplomacy strategic risks to China's influence in the global energy market and explain the importance of the role of the U.S. alliance and how countries may mitigate the energy threat from Russia.

## 1.1 Poland's Energy Security factor conditions

Currently, the natural resource mix produced in Poland include 61% hard coal, 18% brown coal, 5% natural gas, 1% petroleum, 15% other [2]. Nowadays, the demand for natural resources in the Polish market is 40% hard coal, 11% brown coal, 14,8% natural gas, 24% oil, 9,7% others [3]. The data shows the overproduction of dirty energy sources and a deficit in natural gas and oil production. A map of coal basins in Poland shows that the primary energy sources, in particular, hard coal and brown coal, are located in the south. Bearing in mind such factors as environmental regulations, depletion of fossil fuel resources, and the unprofitability of Polish mines, they are a dubious advantage, and they will not grant Poland needed energy security in the future.



Figure 2: Coal basin in Poland

Statistics show that Polish domestic natural resources are not sufficient to cover consumers' needs and support Poland's prosperity. Taking into consideration the EU's industrial 4.0 energy transitions from coal to cleaner sources of energy, Poland is looking for alternative solutions that will replace dirty sources of fuel. However, domestic oil and gas deposits are minimal, and potential shale gas deposits have not yet been extracted. To cover this economic deficit, Poland must cooperate with gas exporters, such as Russian, to meet its national energy demands. Due to its geographical location and robust infrastructure, the Russian Federation has had a competitive advantage in providing Poland with its energy needs creating detrimental dependency.



On the European market, Russia is considered a monolith in the field of gas extraction, production, and sales. The largest Russian company in this area is the state's own company Gazprom Public Joint Stock Company (PJSC), founded in 1989 with headquarters in Moscow. Taking into account that PJSC holds the world's largest gas reserves by company at 36,1tcm, which is 16% of the world's reserves, a 600bcm production capacity, the pipeline length of 172,600 km, and storage infrastructure, it is an indisputable regional leader in gas production [4]. Within the European market, Central European and Baltic members of the EU (CEB of EU) that were formerly part of the Eastern Bloc lack sufficient domestic natural resources and rely on long-term contracts for natural gas and oil from Russian-the leading regional supplier. However, dependence on one supplier is a threat to CEB of EU' energy security and thus is a risk to national economic stability.

It is imperative these countries maintain energy stability, develop industrial infrastructure, diversify suppliers, and seek new energy alliances to reduce dependence on a single supplier and avoid a serious threat to their respective economies. Until the collapse of the Soviet Union, nearly 100 percent of the former Easter Bloc Countries (EBC) imported gas and oil came from Russia, and EBCs did not treat issues affecting energy security as strategic concerns. Recent global security events, such as an increase in gas and oil prices, escalated and prolonged conflict in the Middle East, Russian invasion of Georgia in 2008, and the unlawful Russian seizure of Crimea in 2014 demonstrated the extreme dependency of CEB of EU' economies on Russian energy supply. It became clear that in the event of a conflict CEB of EU energy and national security would be endangered.



**Figure 3:** East to West Energy Pipelines

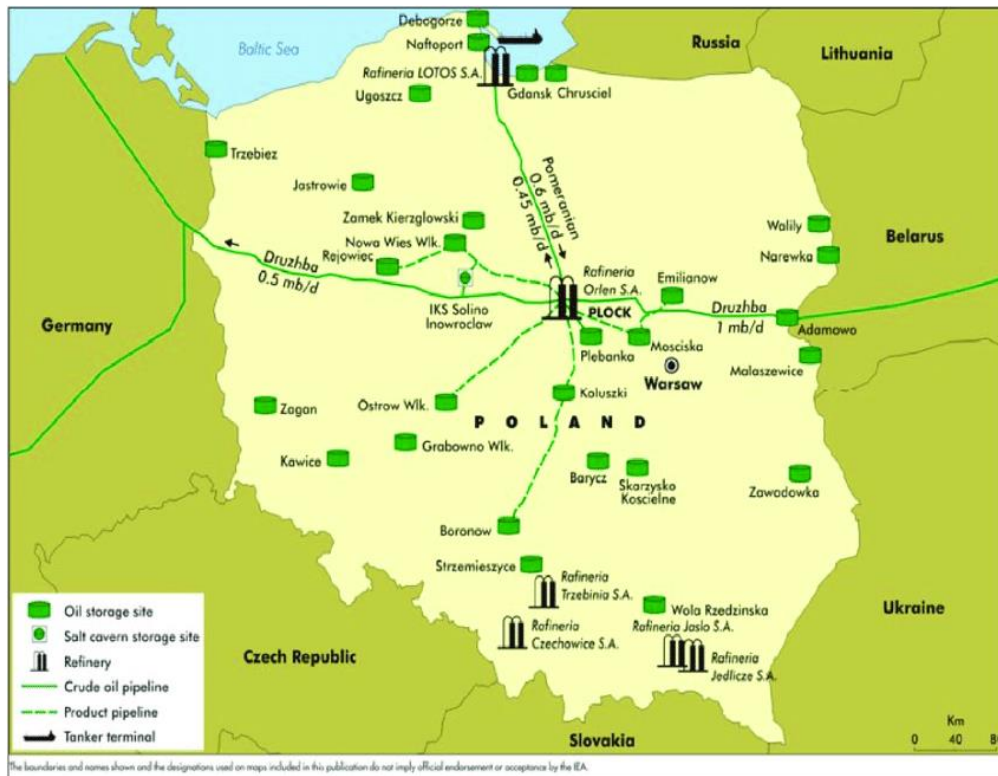
Today, import statistics continue to confirm both the CEB of EU and Western European countries are still heavily dependent on gas supplies from Russia. While the CEB of EU have taken several actions to become independent of Russian supplies, some Western European countries such as Germany do not see this as a threat. Despite the opposition to Russia's gas infrastructure expansion among most European countries and the sanctions imposed by the U.S. on companies supporting the development of the Nordstream 2 (NS2) Russian gas pipeline, Germany continues to support this investment. Bearing in mind that with the launch of NS2 and the southern pipelines, the gas transport through the Brotherhood pipeline in Ukraine will be suspended, which will threaten this region of Europe and a key source of income for the Ukrainian economy.



Poland's LNG terminal in Świnoujście became the symbol of its energy independence. This strategic investment allowed for receiving liquefied natural gas by sea from virtually anywhere in the world. The gas terminal in Świnoujście is the largest LNG facility in northern central/eastern Europe. The European Regional Development Fund, financed its construction with 224 mil EUR, along with 5 mil EUR from the European Energy Program for expansion [5]. The current regasification capacity of the terminal is 5bcm per year. The terminal also has two cryogenic process LNG storage tanks with a capacity of 160,000 m<sup>3</sup> each. The expansion of the gas terminal is currently being completed and is being financed with 128 mil EUR from the EU's Infrastructure and Environment program. This investment will provide additional storage facilities and coastal infrastructure, increasing the regasification capability for the terminal by 50% to 7.5bcm per year. The expansion also includes the installation of the third cryogenic tank, construction of a transshipment installation for railways, and port facilities for improving the loading and unloading of LNG. Poland's investment indicates the seriousness of the Polish government to minimize the influence of Russian gas in its market. Furthermore, the development of the gas terminal is contributing to the diversification of Poland's natural gas supply sources, increasing its energy security, and serving as a regional gas hub that in the region supporting Ukraine, the Czech Republic, Slovakia, and the Baltic States.

Another important sector for the Polish's energy security is the oil market with its supplies and transport and storage infrastructure. Similar to natural gas import, Poland purchases the most oil from Russia through the Brotherhood pipeline (Druzhba), which by 1996 accounted for 100% of imported oil. Keeping in mind the dependence on oil supplies from the East, the Polish government has taken steps to increase energy independence and security by expanding national infrastructure and signing contracts with other oil suppliers such as Nigeria, Great Britain, and Kazakhstan [6]. These activities increase the share of other oil suppliers for the Polish market, which has been growing for several years. The statistics confirm the fruitful result of these activities. In the article "Petrol and Natural Gas Market of the Visegrád Group Countries 1993–2016: Current State and Prospects " Kłaczyński says that "in 2015, Russia's share in the Polish oil market was 88%, the remaining 1.4% is from Saudi Arabia, 2.4% from domestic deposits, including wells in the Baltic Sea, and 1, 2% imported from Norway [7]." Due to the Polish government's strong position and related investment, as well as contracts for the supply of crude oil, changes in this sector are progressing quickly. In the third quarter of 2018, Russian crude oil fell to 67.2% of all imports [8]. In the first half of 2019, it was 63 percent of all crude oil imports. This policy resulted in the entry and strengthening of other suppliers on the Polish market, such as Saudi Arabia 15%, Nigeria 7%, Great Britain 5% as well as Kazakhstan and Norway 3% each of total Poland's crude oil imports [9].

One of the vital state energy security elements is oil transportation and storage infrastructure. In Poland, there are three oil terminals; the largest of them is Naftoport, located in Gdańsk. It is the only sea terminal for crude oil transshipment in Poland and the biggest national terminal for the transshipment of its refining products. Naftoport is also one of the largest oil transshipment terminals in the Baltic. Its handling and storage capacity amounts to 36Mt of oil and 4Mt of petroleum products per year [10]. In the maritime pier, transshipments of crude oil, gasoline, aviation fuel, diesel oil, heating oil, condensate, and components are carried out. In Poland, there are also two smaller terminals located in Gdynia and Szczecin. However, the sum of their capabilities in relation to Gdańsk allows the retention of only up to 5Mt. Moreover, these two terminals are not connected to the pipeline system, which limits their distribution capacity compared to Gdańsk.



**Figure 4:** Oil infrastructure in Poland

The Naftoport is an essential element of the oil supply logistics, supplying PKN Orlen and Grupa Lotos refineries with raw material. Its connection to the Pomeranian pipeline also enables the export of petroleum products by sea from Poland. In addition to crude oil and petroleum processed products pipelines, there are many oil storage areas in Poland that are supplied by land and rail, providing the opportunity to secure the market's needs with this type of energy resource. This infrastructure increases the possibilities of storing raw materials in the event of supply disruptions, which reduces the risk to the market.

## 1.2 Poland's Energy Security demand conditions

Domestic natural resources availability does not guarantee the state's energy security. A country needs transmission and storage infrastructure for current needs and keeping a reserve for economy mobilization needs. The annual Polish demand for natural gas is 18bcm per year. Poland imports 14bcm, of which 10bcm [11] is covered under contract with Gazprom [12]. Despite the significant investment in Świnoujście, 7.5 bcm per year of gas will not cover current Polish demand. In April 2019, Poland signed a grant agreement from the Cohesion Fund of 215 mil EUR to develop the Baltic Pipe. The pipeline is scheduled to be completed and operational in 2022. The goal of this project is to create a new independent gas supply corridor that connects sellers from Norway with Poland and its neighbours, and transport natural gas from Świnoujście to the Danish and Swedish markets [13].

Both the investment in the Polish gas terminal and the Baltic Pipeline will benefit not only Poland, but also customers in neighbouring countries due to the energy cooperation. These projects are of particular importance for increasing security and diversifying the directions of natural gas supplies to the region. They are contributing to an increase in competition in the gas market and decrease the dependence on supplies from Russia. Similar to natural gas



import, Poland purchases the most oil from Russia through the Brotherhood pipeline (Druzhba), which by 1996 accounted for 100% of imported oil. Keeping in mind the dependence on oil supplies from the East, the Polish government has taken steps to increase energy independence and security by expanding national infrastructure and signing contracts with other oil suppliers. These activities increase the share of other oil suppliers for the Polish market, which has been growing for several years. The statistics confirm the fruitful result of these activities.

In addition to Russia, China's Energy Diplomacy serves as an external risk and influence to Poland's energy security and national prosperity. The People's Republic of China (PRC) the challenge of instituting a more self-reliant energy security policy to sustain its economic growth and Russia's aggressive behaviour to control the CEB of EU's energy supply. The International Energy Agency projects China will be the largest global energy consumer, oil importer, and coal producer in the world by 2040 [14]. China's energy security policy is constrained because of its dependency on imported petroleum to support its total national energy consumption. Also:

- China remained the world's largest energy consumer, accounting for 24% of global energy consumption and contributing 34% of global energy demand growth in 2018 [15].
- In 2018, among fossil fuels, consumption growth was led by natural gas (+18%) and oil (+5.0%), while coal remained the dominant fuel. China's coal consumption as its share of total energy consumption in 2018 (58%) hit a historical low importing 54% of its coal from Australia, 31% from Indonesia, and 17% from Russia [16].

China's ability to synergize Sino-trade policies, foreign direct investment, and foreign energy-related acquisitions has been advantageous to supplant current international trade agreements and increase international Sino-business to divert world resources to China. Through its Shanghai Five negotiations and Sino-state owned international acquisitions, China has developed energy partnerships with Russia, Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan. In 2013, China's total \$32B oil investment in Kazakhstan's Kashagan project to explore 12 oil fields of proven reserves of 390mts and the Kazakh-Chinese oil pipeline construction demonstrates China's aggressive nature to outpace any international foreign investment in oil exploration [17]. The completion of the pipeline allowed Kazakhstan to double its oil exports to China, allowing China, in turn, to diversify its oil imports from Russia.

### 1.3 Poland's Energy Security related and supporting industries

Russia is looking for new buyers and sees China as a key new gas market for sales growth. The Sino-Russia energy diplomatic efforts represent a more dichotomous environment. Institutionally, infrastructure development has served as the catalyst of the relationship. The Sino-Siberia pipeline is the most abundant gas project between the two countries [18]. The Siberia pipeline has allowed Russia to diversity itself from the European markets, in turn, benefitting China. Russia notes the threat to its gas interests in Europe. Some European countries, such as Estonia, Latvia, Lithuania, and Poland, are taking steps to become independent of Russian supplies. Also, the rapid production of gas and exports from Norway and the increase in imports by European countries Liquefied Natural Gas (LNG) from the U.S and Qatar, are causing Russia to look for new outlets. Therefore, Russia is expanding its pipeline infrastructure towards China and increasing the LNG production it intends to sell to countries where its pipelines do not reach. Russia is aware of losing customers on the





European gas market and sees an opportunity for redirecting gas export to the China market. That is why it signed a sales contract for 30 years of 38bcm gas via the Power of Siberia pipeline in 2014 with the possibility of increasing by 6bcm in the next few years. To support that investment, the seller uses the Czajandirskoye fields, and, in parallel, the company is building an 800-kilometer pipeline to the Kovykta fields [19].

The solidification of the Sino-Russia gas pipeline and Russian's pursuit in constructing the Nord Stream 2 (NS 2) gas pipeline along the Baltic Sea is a threat to Poland's energy security and others in the region. The NS2 capacity of 55bcm per year will allow Gazprom to directly export gas to the Western European market, bypassing Poland. Also, the launch of the pipeline detrimentally affects Ukraine's economy, which is dependent on Russia's gas throughput transport through Ukraine. This installation is a threat to both Ukraine and Poland transit routes that have been placed for years, bringing revenues and access to the resources. Underscoring NS2 is Gazprom's projected dominance in the European market. The Russia Federation wants to flood Europe with large amounts of gas at low prices to stop the construction of LNG intake ports along the region, and in its historically aggressive behaviour, impose increased gas prices to ensure that Russia's interests are secured.

Due to the U.S. sanctions imposed on companies supporting NS 2 construction, Poland has gained more time to prepare for this threat. The current contracts for gas supplies from Russia expire in 2022. There are discussions about whether to completely give up acquisition from this direction or if acquisition can be significantly reduced. The current Polish energy policy gives such opportunities because the expansion of the gas port in Świnoujście and Naftoport in Gdańsk is close to being completed, and the Baltic Pipe will be finalized in 2022, ensuring the increase in gas supplies.

Polish critical infrastructure is not free of hybrid threats. The increased risk is mainly associated with coastal projects such as the LNG terminal in Świnoujście and Naftoport in Gdańsk, whose safety is additionally affected by the proximity of the Kaliningrad Oblast. Another essential element of hybrid activity in the aspect of information to arouse panic by introducing false information or even a potential attack on critical infrastructure. Also, in the cybernetic aspect, one should take into account the possibility of the Russian influence on energy infrastructure to destabilize the supplies of competing companies or delays in the construction of new investment.

## 1.4 Poland's Energy Security, A Staple of Defiance, Firm's Strategy

For several decades, issues affecting energy security were not treated by Poland as strategic concerns. Until the collapse of the Eastern Bloc, nearly 100% of the countries imported energy resources came from Russia. It was only during the global political changes and the significant increase in gas and oil prices that a broad discussion began. The peak was in 2008 when oil prices soared, and the ongoing conflict in the Middle East and the Russian invasion in Georgia did not anticipate rapid stabilization in this sector. Another key event is the hybrid war between Russia and Ukraine. After the unlawful seizure of Crimea in 2014 by Russia, it became clear that the list of potential hybrid threats for Central European countries is much greater than the "standard" blackmail on the part of Gazprom regarding gas prices and supplies. As a result, Ukraine lost its ability to import gas and oil from Russia overnight, which resulted in higher commodity prices. These facts show how much the Polish economy depends on Russian raw materials. In the event of a conflict between countries, the security of energy resources will not be guaranteed.

## 1.4.1 *Poland Energy alliances and policy*

Developing and seeking new alliances is aimed at increasing the security of the State and strengthen its position in the global environment. The benefits of a partnership are in the sharing of goods a country has in exchange for the resources a country needs. Poland is a member of the V4 Visegrad Group, founded in 1993, whose aim is to improve and strengthen the position of Poland, the Czech Republic, Slovakia, and Hungary countries in cooperation with the EU and NATO in various areas in this field of energy security. Kłaczyński, in the column "Gasoline and Natural gas market of the Visegrad Group 1993–2016: current state and prospects," articulates that "Among the V4 countries, Poland has the greatest potential for natural gas and oil production." The author also presents the records of resources that place Poland as a leader among the V4 member states [20]. It would seem that Poland does not need allies and can rely on domestic producers PKN Orlen and Lotos. However, nothing could be more wrong. Local companies are too small to be independent on a global scale and ensure the energy security of the State. Also, current domestic gas and oil production is insufficient to cover Poland's economic needs. That is why Poland should look for new local alliances that will increase security in this area. Considering partnerships, one should also keep in mind suppliers of natural resources from around the World. The negotiated long-term contracts for reasonable price terms of diversified supply direction can reduce the potential risk of supply chain disruptions.

Renewable energy is another energy sector that has an impact on national security. Following energy policy, Poland also diversifies the energy mix towards renewable energy sources. According to EU requirements, the share of this sector in the final energy consumption of the State should reach 15% in 2020. In Poland, wind energy is the fastest-growing branch of renewable sources of energy, then solid biomass, but the share of hydropower is not widely used. Individual customers mainly invest in solar energy and heat pumps in households. Development and increasing the use of renewable energy sources contribute to the diversification of the sources and reduce dependence on other imported conventional sources such as natural gas or oil. Also, they are reducing the use of coal that pollutes the environment.

## 1.4.2 *Mitigation of risk for the Polish energy sector*

The development of infrastructure is an essential requirement for keeping the state economy on a path of long-term economic growth. Poland, using its own and EU funds, has made significant progress in modernizing energy infrastructure over the past 20 years [21]. The expansion of the energy transport and storage sector helps to diversify the directions, supply sources, and types of fuels used. However, due to the transmission system and currently binding contracts for oil and gas supplies from Russia, this still poses a threat to Poland's energy security.

It is indisputable that the State's energy security policy is significant, and measures should be taken to reduce the dependence on supplies from a single source, which increases independence in the event of reducing supplies or an increase in energy prices. To become independent from the eastern supply of energy resources and increase energy security, the current Polish investment plans through 2030 provide for a significant investment in storage and transmission infrastructure. Also, this threat could be reduced by implementing an appropriate energy strategy, diversifying suppliers, developing alternative energy sources, modernizing, and developing refineries.

## Conclusions

Based on the above analysis of natural resources and energy-transportation infrastructure, using the Porter's diamond model, it can be concluded that competition on the Polish energy market is highly dependent on Russian energy supplies. Many companies are entering the market to replace Poland's leading supplier, Gazprom. The Polish government has instituted innovative industrial policies, infrastructure development, and international financing in order to introduce renewable energy and energy diversification to improve its national security and prosperity. Polish natural gas and oil demand are growing. However, due to competitiveness on the market, it is possible to minimize the dependence of supplies from Russia while maintaining good price resources. The fact is that due to the right policy and investments, this national security concern is decreasing. Through international cooperation and economic assistance, other global actors such as the U.S. and Europe can oppress Russia energy leadership in Europe and China's aggressive behaviour to maintain global energy bargaining power and prosperity

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