Exploring the Visegrád-Russia Connection: Understanding the Political and Economic Ramifications of Sanction Policies Four Years Later (Essay 2: Energy)

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Exploring the Visegrád-Russia Connection: Understanding the Political and Economic Ramifications of Sanction Policies Four Years Later

Essay 2: Energy

2018
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Introduction

Whenever discussing European geopolitics, the topic of energy is at the forefront of many leaders’ minds. In this second essay on V4-Russian relations, the pressing issue of energy security is explored in order to better understand how Czechia, Hungary, Poland, and Slovakia rely on Russia for their energy needs. First, I will review how the 2014 EU sanctions are designed to specifically target certain individuals and entities deemed critical to the Russian energy industry. Next, an overview of the V4 dependence on Russian energy imports will be explored. After this, the V4-Russian energy relationship will be further separated into two major categories – natural gas and petroleum. Finally, a discussion will be undertaken to explain current developments in the field and how the dependence on Russian energy may expand or shrink in the coming years. As a stated EU goal is to diversify energy supply away from Russia due to Russian action in Ukraine, the future of EU and V4 energy security is of the utmost importance.
Review of Energy-Related Sanctions

1. Overview of Western Sanction Policy & Significant Actors Targeted

Following the Russian annexation of Crimea in February 2014, Russia was harshly criticized by the international community for their perceived aggression in the region. Deemed a violation of Ukrainian national sovereignty by many, the United States and EU legislated a series of diplomatic and economic sanctions against Russia to express Western displeasure. As described in the Preface, these sanctions fall within five broad categories. For this study, my focus is on two specific types of EU sanctions: 1) individual restrictive measures (asset freezes and travel restrictions) on 149 people and 38 entities and 2) economic sanctions limiting Russian access to Western capital markets and sensitive military technologies and restricting the Russian import of certain strategically important goods.

Among individual restrictive measures against non-governmental actors, individuals and entities tied to the energy industry make up a significant portion of the list. As the poorly-diversified Russian economy is highly reliant on their energy industry, many expected sanctions to particularly target Russia’s most vital economic sector.

Table 1. Significant Russian Entities Targeted by Western Sanction Policy

<table>
<thead>
<tr>
<th>Name</th>
<th>Sector</th>
<th>Sanctioning Government(s)</th>
<th>Important Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosneft</td>
<td>Energy</td>
<td>EU, US</td>
<td>Second largest energy company in Russia.</td>
</tr>
<tr>
<td>Gazprom Neft</td>
<td>Energy</td>
<td>EU</td>
<td>Oil arm of Gazprom.</td>
</tr>
<tr>
<td>Transneft</td>
<td>Transportation</td>
<td>EU</td>
<td>Owner of all crude oil pipelines in Russia.</td>
</tr>
<tr>
<td>Gazprom</td>
<td>Energy</td>
<td>US</td>
<td>Largest company in Russia. Often used for geopolitical purposes.</td>
</tr>
<tr>
<td>Lukoil</td>
<td>Energy</td>
<td>US</td>
<td></td>
</tr>
<tr>
<td>Surgutneftegaz</td>
<td>Energy</td>
<td>US</td>
<td></td>
</tr>
</tbody>
</table>

Bold indicates an entity sanctioned by the EU.

As Table 1 shows, the largest Russian energy companies have all been restricted in some way by sanction policies. Among the entities listed above, all possess significant shares of the Russian energy industry. Particular numbers related to this will be explored in the following sections. Sanction policy affects each of these entities by restricting their access to long-term debt, defined as debt possessing a maturity period longer than 30 days.

2. EU & United States Energy Sanction Policy Differences

Significant reasons exist which explain the discrepancy between the EU’s sanction policy and the United States’ policy, related to the Russian energy sector. While both, the EU and the United States, prohibit the sale of technology to sanctioned firms for deep water oil drilling, Arctic oil exploration, and shale oil exploration, the EU policy specifically applies to the oil industry, but not the natural gas industry. The United States however names both industries—oil and natural gas (1). The strategic motivation for the EU to only sanction oil, and not natural gas, arises from the European dependence on Russian natural gas.

In 2016, Russian natural gas imports compromised 39.5% of the total share of EU natural gas imports (2). For 2016, of this 39.5%, Gazprom’s share amounted to 33%. In 2017, this share increased to 35% (3). Therefore, it would be unwise for the EU to restrict a firm that accounts for at least one third of the EU’s annual total natural gas imports. Differing from the natural gas market, the oil market showcases much greater diversity of suppliers due to its globalized nature. The United States is nowhere near as reliant upon Russia for natural gas as their European counterparts, therefore allowing them to sanction Russian natural gas actors without fear of significantly affecting their supply base. The difference in import dependency explains the discrepancy in American and European sanction policy, and the lack of

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1 Rapoza, Kenneth: Here's How Europe's Russian Sanctions Differ From Washington's
European sanctions targeting Gazprom, Lukoil, Surgutneftegaz, and Novatek. However, as Gazprom Neft and Transneft are inherently oil-focused entities, these same natural gas supply considerations do not apply for the EU. Rosneft, the only dually sanctioned entity, while an integrated energy firm specializing in both oil and natural gas, does not possess a similar European natural gas market share as Gazprom though. Therefore, this affords the EU the ability to sanction Rosneft without severely affecting their natural gas supply base.

**Introduction to V4 Energy Market Structures**

1. **Overview**

   In order to appropriately understand the energy security concerns of each V4 nation, it is first important to recognize each countries’ respective energy mix. Czechia, Hungary, Poland, and Slovakia all exhibit a strong reliance upon traditional fossil fuels for their primary energy supply. In this section, each V4 countries’ energy mix will first be explained. Next, electricity generation and consumption patterns will be analyzed. Finally, we will look at trends for each country, in order to understand what the future may hold for each country.
2. Energy Mix by Country

**Figure 1. V4 2015 Gross Inland Energy Consumption by Type (Megatoes)**

Data Source: EU Energy in Figures Statistical Handbook (2017)

As shown, the energy consumption of Czechia, Hungary, Poland, and Slovakia are all primarily concentrated within solid fuels, petroleum products, and gases for their energy needs. Looking at this data in percentage terms, this dependency becomes even clearer.

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4 Megatoes is defined as one million toe, or tonne of oil equivalent, which is a measurable form of energy released.
Figure 2. Czechia Gross Inland Consumption Energy Mix (2015)

Source: EU Energy in Figures Statistical Handbook (2017), AJTK Calculations

Figure 3. Hungary Gross Inland Consumption Energy Mix (2015)

Source: EU Energy in Figures Statistical Handbook (2017), AJTK Calculations
Figure 4. Poland Gross Inland Consumption Energy Mix (2015)

Source: EU Energy in Figures Statistical Handbook (2017), AJTK Calculations

Figure 5. Slovakia Gross Inland Consumption Energy Mix (2015)

Source: EU Energy in Figures Statistical Handbook (2017), AJTK Calculations
While varying in magnitude for each V4 country, petroleum and natural gas make up significant portions of each nation’s energy mix.

3. Consumption & Efficiency Measures by Country

Continuing on now, since the economic transitions of the early 1990s, Czechia, Hungary, Poland, and Slovakia have all made significant strides within their energy consumption patterns. Each countries’ consumption of energy has remained fairly constant since 1995, as can be seen in Figure 6. No notable final energy consumption increases or decreases exist for any one country. In fact, it seems that Czechia and Slovakia consumption patterns have actually displayed a downward trend since 1995, albeit this a small trend.

Figure 6. V4 Final Energy Consumption (1995-2015)

![Figure 6: V4 Final Energy Consumption (1995-2015)](image)

Data Source: EU Energy in Figures Statistical Handbook (2017)

Next, since 1995, each V4 country has made significant strides to increase their energy efficiency, as measured by energy intensity. Defined as units of energy per unit of gross domestic
product, energy intensity is a simple way of understanding the cost of converting energy into GDP. The higher the intensity value, the costlier it is to convert energy into GDP. The converse is defined equivalently; the lower the intensity value, the cheaper the cost of converting energy to GDP. Figure 7 displays strong downward trends for all V4 countries.

*Figure 7. V4 Energy Intensity (1995-2015)*

Since 1995, energy intensity has decreased by 37%, 38%, 56%, and 57% respectively for Czechia, Hungary, Poland, and Slovakia.

**The V4-Russia Petroleum Relationship**

1. Respective Market Shares of Russian Petroleum Companies

Turning first to the petroleum markets, the Russian oil industry displays oligopolistic tendencies due to the small number of major players. Figure 8 provides of visualizing this market structure.
Rosneft displays a massive 37.8% market share in terms of total oil produced, based upon 2016 figures. Rosneft is followed by Lukoil, Surgutneftegaz, and Gazprom Neft, an oil-focused subsidiary of natural gas giant Gazprom, who owns 95.7% of Gazprom Neft’s shares (5). In part due to Western sanction policies, these percentages are expected to remain constant in the near-term. Without collaboration from Western oil companies, Russia is not likely to develop their substantial arctic offshore and shale resources (6).

Returning to the United States and EU list of sanctioned entities, it is clear that sanctions have been designed to target the most significant Russian oil firms. Uniquely, Rosneft is the only oil firm to be sanctioned by both the United States and the EU. As this work focuses on the V4, and therefore EU sanctions, sanction policy referenced only applies to Rosneft and Gazprom Neft, unless noted otherwise.

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5 Gazprom Neft: ir.gazprom-neft.com/share-data/shares/
6 U.S. Energy Information Administration: Country Analysis Brief: Russia
Also important to note here is the sanctioning of Transneft, an oil transportation entity. Transneft is the largest oil pipeline (midstream) transporter in the world and transports 85% of oil extracted in Russia. It is 100% owned by the Russian federal government (7). Transneft is also the owner and operator of Druzhba (Friendship) pipeline, one of the largest in the world, which transports between 1.2 and 1.4 million barrels of oil a day over its almost 5,500-kilometer length (8). In total then, EU sanctions target entities which produce 48.3% of Russia’s total crude oil production and transport 85% of Russian-extracted crude oil.

2. V4-Russia Crude Oil Supply Dependencies

Back to Central Europe, if EU sanctions target entities that produce approximately 50% of Russia’s total crude oil and transport 85% of that oil, what percentage of V4 crude oil imports originate from Russia? Figure 9 displays the historical share of oil imports originating from Russia for Czechia, Hungary, Poland, and Slovakia since 1995.

Figure 9. V4 Crude Oil & NGL Import Dependency (1995-2015)

Data Source: EU Energy in Figures Statistical Handbook (2017)

7 Transneft: www.en.transneft.ru/about/
8 International Association of Oil Transporters: www.iaot.eu/en/oil-transport/druzhba-pipeline
As easily seen over the last 20 years, V4 countries have not just looked to Russia as their primary source of oil imports, but almost as their exclusive source. More recently, these import shares have shown relatively little change, as shown in Figure 10, even with the implementation of EU sanction policy.

Figure 10. Russian Share of V4 Crude Oil Imports (2010-2016)

Source: Observatory of Economic Complexity, AJTK Calculations

The statistics bear that even with the introduction of EU sanctions in July 2014, Russia has retained their dominant share of V4 petroleum imports. Accounting for the capital market restrictions applied to Rosneft, Gazprom Neft, and Transneft, and the high import percentages of V4 countries, how strongly should policymakers be concerned with sanction policy harming V4 energy security? The answer lies within the structural nature and pricing factors of the petroleum market.
3. Structural Nature

Midstream, one of the three major stages of the oil industry’s operations, involves the transportation, transformation, storage, and sale of raw crude oil into more usable final products (9). For Russia, once crude oil is extracted from the Arctic region or Siberia, it moves into the midstream. Unlike Rosneft and Gazprom Neft, who are active in all three major oil value segments (upstream, midstream, and downstream), Transneft is solely involved in the midstream operational arena. Figure 11 provides a cartographical view of the scale of Russian midstream industry and a preliminary understanding of how oil moves into Central Europe.

Figure 11. Eurasian Oil Pipeline Network

Source: CSS Analyses in Security Policy (ETH Zurich)

The EU, in total, receives 80% of their crude oil via sea transport and vehicular transport though. Only 20% of EU crude oil arrives via pipeline (10). The highly developed European oil tanker industry

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9 Investopedia: www.investopedia.com/terms/m/midstream.asp
10 European Parliament: An Assessment of the Gas and Oil Pipelines of Europe
provides Poland, alone of V4 nations, with the ability to directly alter their supply source anytime. However, for land-locked Czechia, Hungary, and Slovakia, the extensive use of vehicular transport to move crude oil within the EU provides a lesser, but still significant level of security against Russian supply risk.

Once crude oil is imported, before it can be used, it must be refined. The refinery process, another aspect of the midstream, is not dependent on possessing a domestic upstream industry. Therefore, the refining of oil can be considered geographically independent of the source of oil. Once refined, oil products are typically transported via rail or truck (11). To date, Czechia, Hungary, and Slovakia possess little refining capabilities. As of 2016, Czechia, Hungary, and Slovakia operated 3, 1, and 1 refineries respectively (12). While this is a concern, due to the ease of ability to transport refined products within the EU, if a shock affected supply, V4 countries could simply import from neighboring EU countries with greater refining capacities.

4. Nature of Prices

In addition to the structural design of oil markets for V4 nation, the pricing mechanism of oil can act as a hedge for energy security for inland Czechia, Hungary, and Slovakia. As oil is an internationally traded commodity, capable of being shipped or transported via a variety of means anywhere in the world, the baseline price of oil is determined by global supply and demand factors. Depending on a country’s geographical position, it looks to a particular crude benchmark price for national crude oil prices. The largest and most important global oil benchmark is the European-based Brent oil spot contract (i.e. Brent), which forms the foundation of prices for five continents. Hundreds of refined oil products, in addition to national crude prices, are tied to the price of Brent (13). Therefore, despite the size of the Russian oil

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11 European Parliament: An Assessment of the Gas and Oil Pipelines of Europe
13 Intercontinental Exchange: www.theice.com/brent-crude
industry, it cannot single-handedly maneuver prices to fit Russian interests. Simply too many other actors and market dynamics are in play.

In my own previous research, I attempted to use a difference-in-differences analysis to establish a link between the average national price of gasoline for Eastern European nations more than 50% on Russian crude oil imports and the implementation of EU Sanctions. Under the hypothesis that EU sanctions would result in increased operational costs for Rosneft, Gazprom Neft, and Transneft, which would then be passed onto end European consumers, I found that no statistically significant relationship existed. As expected, while gasoline prices demonstrated a significant correlation with the price of Brent, no significant increase in prices was seen after the implementation of EU sanctions (14).

5. Conclusions

With the sanctioning of Russian oil giants Rosneft and Gazprom Neft, who account for almost 50% of total Russian crude oil production, and transportation firm Transneft, who transports 85% of Russian crude oil, V4 countries have reason to worry about the security of their energy supply. The significance of these sanctions cannot be overlooked due to the almost exclusive V4 dependence on Russian crude oil imports. However, due to the structural nature of the European midstream, the V4 can easily adjust their supply away from the Druzhba, and Russia, if necessary. Another hedge exists as well – the globalized structural nature of oil prices. As the majority of global oil prices strongly correlate with the Brent benchmark, there is limited power for Russia to leverage prices for political aims. Between the structural nature of petroleum markets and globalized prices, fallback options do exist for V4 petroleum demand. By employing greater use of railway and road transportation, Czech, Hungarian, Polish, and Slovakian markets can weather Russian-linked supply shocks to crude and refined petroleum markets. However, such shifts would not be ideal, as economic theory dictates that prices would rise to accommodate the additional transportation. The size of such a price increase is difficult to determine for such a drastic

14 Peters, Eric: An Inquiry into the Effect of the 2014 Russian Sanctions on European Gasoline Markets
situation where Russia reduces all crude oil exports to zero. However, EU sanctions have not resulted in such extreme geo-political maneuvering. Nor would creating such an artificial supply shock be in the best interest of the Russian oil industry. Referencing my own research again, to date no substantial price increases have been seen for V4 nations, or other highly dependent European countries due to assumed rising operating costs for Rosneft, Gazprom Neft, and Transneft. Even so, the extremely high V4 share of Russian crude oil imports should remain a geo-political energy security concern.

The V4-Russia Natural Gas Relationship

1. Respective Market Shares of Russian Natural Gas Companies

Similar to the petroleum market, the Russian natural gas market displays a small number of actors, but with a more monopolistic bend, in favor of oft-discussed Gazprom.

Figure 12. Russian Natural Gas Production Market Share by Company (2016)

Source: Statista, AJTK Calculations
Of EU Sanctions, only Rosneft faces significant capital market restrictions. Even still, despite sanction policy restricting European private firms from engaging in joint ventures with Rosneft on arctic and shale exploration, this only applies to oil ventures for Rosneft, not natural gas. EU sanctions do not directly target the Russian natural gas industry, in stark contrast to their American counterparts.

Particularly important here is gas giant Gazprom, with a market dominating 65.5% share. While legally a private company, the Russian government owns a 50.23% majority stake in Gazprom of 2016 (15). Due to its quasi-governmental status, Gazprom has been afforded the exclusive right of being the sole legal exporter of pipeline natural gas, much to the chagrin of competitor Rosneft (16). Therefore, in some ways via their control of gas transportation, Gazprom possesses a legal monopoly on the Russian natural gas industry. This easily affords the Russian government an incredible amount of economic and political leverage over countries dependent on Russian natural gas.

2. V4-Russia Natural Gas Supply Dependencies

How dependent are Czechia, Hungary, Poland, and Slovakia upon natural gas imports? As can be seen in Figure 13, incredibly dependent.

Since the mid-1990s, each V4 country has looked outside their own borders for at least 60% of their natural gas supply. Oftentimes this number is significantly higher, as is the case for Czechia, which sources almost their total supply of natural gas from other nations. What share does Russia possess of these import dependencies?
As Figure 14 shows, since 2016, Russia has possessed a significant share of each V4 nation’s gas imports. Ranked for every year from 2010 – 2016, Russia is the #1 import originator for natural gas for all V4 countries. On average, over this same time period, Czechia, Hungary, Poland, and Slovakia have imported 65%, 63%, 42%, and 67% of their natural gas from Russia respectively. However, there is reason to believe that these numbers may be even higher than reported.

On the European continent, outside of Russia, only one other nation possesses sizable natural gas reserves – Norway (17). Knowing this, and understanding that a re-export market exists for energy products, could V4 countries actually be importing Russian-originating natural gas from other EU countries?

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Figure 15 displays V4-European natural gas import relationships that could be considered suspicious under this guise. Care must be taken in interpretation of this figure. As Germany, Austria, Belarus, and Czechia each do not possess their own significant natural gas reserves, what is the source of their natural gas exports? While German, Austrian, Belarusian, and Czech natural gas exports could originate from Norway, or even Romania, it is equally, if not more likely, that they originate from the world’s largest natural gas producer – Russia. Assuming all of this gas originates from Russia, when combined with Russia’s visual share of each V4 country’s natural gas imports, the V4 reliance on Russian gas is magnified:
Table 2. Potential Natural Gas Imports Originating from Russia (2010-2016)

<table>
<thead>
<tr>
<th></th>
<th>Czechia</th>
<th>Hungary</th>
<th>Poland</th>
<th>Slovakia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Visual Russian Import Percentage</td>
<td>65%</td>
<td>63%</td>
<td>42%</td>
<td>67%</td>
</tr>
<tr>
<td>Average Suspicious Import Percentage</td>
<td>16%</td>
<td>27%</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>Potential Total Russian Import Percentage</td>
<td>81%</td>
<td>90%</td>
<td>51%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Source: Observatory of Economic Complexity, AJTK Calculations

While simply speculation regarding the total share of Russian-originating V4 natural gas imports, such conjectures illustrate the same message – Russia controls the V4 natural gas market. Considering the influence of Russia then on the V4’s supply of natural gas, how do EU sanctions play into this? For V4 natural gas security, are the effects of sanctions simply concerning, like they are for the petroleum industry, or is the situation must more dire?

3. Structural Nature

To understand the impact of EU sanction policy for Central European natural gas markets, one must understand the supply chain of natural gas. Comparative to the three stages of the petroleum industry, the natural gas industry also possesses three stages – production, transmission, and distribution. These mirror the petroleum industry’s upstream, midstream, and downstream arenas directly. Transmission, or the natural gas midstream equivalent, is the geopolitical key to Gazprom’s, and therefore Russia’s, hold on the supply side. Outside of the still developing liquefied natural gas (LNG) and compressed natural gas (CNG) markets, the only cost-efficient means of transporting large quantities of natural gas is via pipeline. Therefore, due to the nature of the transmission component, the European natural gas market possesses a much less liquid design than the petroleum market. For each pipeline connecting Russia (and Gazprom) to the EU market, Russian market power grows over the EU, and therefore V4. In hopes of hedging against this risk, EU sanctions intentionally target these pipelines.
As shown, many of the most critical gas pipelines either originate in Russia or pass through Russian territory. Due to instability in the Ukrainian-Russian relationship relating from the 2014 Russian Invasion/Annexation of Crimea, the original cause of EU sanction policy, Russia has aimed to shift supply away from pipelines passing through Ukrainian land, like the NEL and Brotherhood (Druzhba Gas). To counter, EU sanction policy is designed to limit the construction of future pipelines, like the now-canceled South Stream pipeline. Harkening back to Essay 1: Econometric Analyses, and the descriptions of product level economic sanctions, EU sanctions almost solely restrict the export of pipeline construction materials and machinery. While there is an ongoing discussion regarding the political costs of the oft-mentioned Nord Stream II, as of today, Nord Stream II remains under construction. This is due to legal agreements signed prior to the implementation of EU sanctions. If completed and utilized, Nord Stream II has been marketed as a way of providing cheaper gas to EU states, including the highly dependent V4 nations. While this remains to be seen from a cost perspective, if Nord
Stream II is constructed, one fact is certain – Russian market power over the V4 natural gas industry will increase.

4. Nature of Prices

Unlike the petroleum industry’s Brent spot contract, European natural gas markets are driven by market fundamentals more than an internationally traded benchmark (\textsuperscript{18}). Therefore, prices experience much greater influences from local market determinants, such as weather and supplier competition. Traditionally, natural gas has been delivered via long-term contracts between each country and Gazprom. Owing to Gazprom’s massive V4 market share and the structural nature of gas transmission, Gazprom has historically controlled price negotiations. The ability to provide a cost advantage over any other supplier for Czechia, Hungary, Poland, and Slovakia is also incredibly influential during contract negotiations. In 2015, Gazprom indicated a shift to more flexible contracts in the future (\textsuperscript{19}). However, the ultimate flexibility and price benefits of these new contracts are still to be determined.

5. Conclusions

The Russian natural gas industry, led by legal monopolist Gazprom, exerts massive influence on European energy economics and politics. For the V4 countries of Czechia, Hungary, Poland, and Slovakia in particular, Russia ranks as the #1 source of natural gas imports by a wide margin. Through MIT’s Observatory of Economic Complexity data and my own calculations, Russia has recorded an average 65\%, 63\%, 42\%, and 67\% import share for each V4 country respectively. Unlike the highly liquid and transportable petroleum industry though, the natural gas industry is structurally rigid. In economic terms, EU sanctions only affect pipeline construction materials and machinery, and do not directly target Russian natural gas entities, outside of Rosneft. Despite the limited to-date economic effects of EU

\textsuperscript{18} Avis, Patrick: What Drives European Natural Gas Prices?
\textsuperscript{19} Roux, Lucie: Russia’s Gazprom Edges towards Flexible Gas Market-Driven Auctions
sanctions for V4 natural gas markets, the design of the market is cause for concern. With the continued Russian pursuit of an operational Nord Stream II, V4 natural gas supply security is facing great danger.

**Future Geopolitical Considerations**

1. **Changing Energy Dynamics**

   With both V4-Russian energy relationships now explored, it is evident that V4 energy security risks related to the natural gas industry are much more significant than the petroleum industry. Despite sanctions targeting petroleum-affiliated Rosneft, Gazprom Neft, and Transneft, and neglecting natural gas giant Gazprom, greater V4 economic and political concern should stem from the design of the Central European gas market. Tied to the discussed transportation and price mechanisms of gas, increased risk stemming from strained EU-Russian relations could ultimately harm V4 energy security. As supply (Russia) and demand (EU & V4) struggle against one another for market power, each side is developing new tactics to gain an edge. For Gazprom and Russia, the further construction of pipelines to Europe remains the objective. Specifically, there are three pipelines either being constructed or considered which satisfy the dual goals of 1) bypassing Ukraine and 2) creating a direct supply link with Western Europe. For the EU and V4, especially in light the 2014 EU sanctions, the aspiration of energy diversification has never been greater. In diversifying their supply base, Central and Eastern Europe in particular aim to loosen the economic influence of their easternmost neighbor.

2. **Russian-led Initiatives**

   a. **South Stream & Turk Stream**

   Even prior to the 2014 Crimean Crisis, Russian-Ukrainian relations had been strained for some time. In 2006, a pricing dispute arose between Russia and Ukraine which ultimately disturbed supply availability for Gazprom’s Western European customers. This was possible as at that time 80% of total
Russian gas destined for Europe passed through Ukrainian land (20). Combined with increasingly unreliable energy relations with other ex-Soviet republics, Russia has looked to diversify away from Ukraine and other former Soviet partners.

The first of these efforts began in 2007, with the proposed South Stream pipeline, which would connect Russia, Bulgaria, Serbia, Hungary, Slovenia, and Italy. A massive pipeline capable of transporting 63 billion cubic meters per year (bcm/y) of natural gas, South Stream looked to connect Russia into the heart of Europe. However, the South Stream was ultimately not constructed. Resulting from a 100 decrease bcm/y drop in European natural gas demand, projected total costs exceeding $40 billion, and EU challenges to its legality, the South Stream project was abandoned in December 2014 (21).

On the same day the South Stream project was canceled a new pipeline project was announced by Russian President Vladimir Putin – Turk Stream. Instead of constructing a 63 bcm/y pipeline to ship gas to Bulgaria, a 63 bcm/y pipeline would now be built between Russia and Turkey (22). Essentially a rerouted South Stream, Turk Stream, via connecting to the expanding non-EU Turkish market, could avoid EU jurisdiction over its construction. The planned Turk Stream crosses the Black Sea, reaching the Turkish port of Kiyikoy, before stopping at the Turkish-Greek border town of Ipsila, right on the edge of the EU. With the stated goal of reducing Russian natural gas transit through Ukraine to 0 by 2019, Turk Stream positions Turkey as a viable alternative as a transit country (23). Even still, EU regulation could still limit the construction of the necessary energy infrastructure needed to move gas the short distance over the border and into Greek territory (and further into Central Europe), e.g. the Tesla pipeline. On the Turkish side, a level of uncertainty remains as well. For a short period in 2016, Russia suspended talks on Turk Stream after a Russian aircraft was shot down by a Turkish jet close to the Syrian border (24). Relations were restored shortly thereafter though. Now, with the strengthening of Russian-Turkish

20 Franza, Luca: From South Stream to Turk Stream
21 Franza, Luca: From South Stream to Turk Stream
23 Franza, Luca: From South Stream to Turk Stream
24 Dyomkin, Denis: Putin Says Russia Hasn't Canceled South Stream, Turkstream Gas Projects
relations, Turk Stream looks likely to be built. With its completion, Russia will possess a foothold right on the edge of EU borders, with increased potential to make true on its promise to eliminate natural gas transits through Ukraine. As the V4 is highly dependent on gas transit through Ukraine, gas supply paths would change drastically. For V4 nations, the Ukrainian hedge against greater Russian natural gas hegemony would be removed.

b. Nord Stream II

The second Russian effort to diversify transit lines away from Ukraine is Nord Stream II. Perhaps more significant for V4 gas supply security, Nord Stream II would expand the carrying capacity of the already constructed Nord Stream pipeline. The original Nord Stream pipeline passes underneath the Baltic Sea to connect Russia directly to northern Germany and Western Europe. With the expansion of the Nord Stream pipeline to include Nord Stream II, the two lines would increase the carrying capacity from the current 55 bcm/y to 110 bcm/y, all while avoiding passing through Ukraine (25). A unique aspect of Gazprom-owned Nord Stream II is the level of collaboration and financing it has secured from Western partners. Agreed upon in April 2017, Nord Stream II secured €4.75 billion in long-term financing from five European firms: Shell, Wintershall, OMV, ENGIE, and Uniper (26). Split evenly between each company, this total will cover 50% of the €9.5 billion cost, with the other half being contributed by Gazprom itself (27). By enlisting buy-in from European companies, Gazprom has intentionally intertwined European business interests with Russian geopolitical strategy. Planned to be completed in 2019, the sheer operational capacity of Nord Stream II would change the geopolitical landscape for Central Europe and the V4. Germany, predominantly sourced by Russia and Nord Stream and Nord Stream II, would

25 Gazprom: www.gazprom.com/about/production/projects/pipelines/built/nord-stream2/
become the EU’s (and V4’s) largest supplier of gas. Similarly, as V4 supply diversity decreases, Russian market power would inversely increase.

Due to the potential of Nord Stream II, the pipeline has faced numerous political and legal challenges. First and most important, new American sanctions against Russia related to the 2016 U.S. presidential election were upgraded in 2017. These new sanctions allow the U.S. Treasury Department to fine non-American firms who collaborate with Russian companies named by the 2014 U.S. sanctions (28). Recall that U.S. sanctions do name Gazprom, unlike their EU counterparts. While the financing agreement between Shell, Wintershall, OMV, ENGIE, and Uniper with Gazprom was finalized before these sanctions, the Treasury Department’s expanded power allows them to fine these European companies. On these grounds, if the Treasury Department decides to collect their fine, the construction of Nord Stream II could be heavily affected.

Outside of Germany, Nord Stream II has faced heavy criticism from EU, V4, and transatlantic leadership. European Union Council President Donald Tusk stated, “The [European] commission has assessed that if Nord Stream II were to be constructed, it would increase Europe’s dependence on one supplier and concentrate 80 percent of Russian gas imports on one route… It would also lead to a dominant position of Gazprom [a Russian state firm] on the German market, by increasing its share to over 60 percent.” (29). The V4’s Czechia, Hungary, Poland, and Slovakia, along with Estonia, Latvia, Lithuania, Romania, and Croatia, signed a joint letter declaring Nord Stream II “poses certain risks for energy security” for their respective nations (30). Additionally, U.S. Secretary of State Rex Tillerson expressed similar concerns in 2018 (31). Of additional concern for V4 nations would be the loss transit fees entailed by a supply shift to an operational Nord Stream II (32).

28 Rapoza, Kenneth: Remember Those Funny European Sanctions Against Russia?
29 Teffer, Peter: Tusk: Nord Stream II Doesn't Help
30 Rettman, Andrew: Eastern EU Leaders to Warn Juncker on Nord Stream II
31 Goettig, Marcin, and Lidia Kelly: U.S. Says Planned Russian Pipeline Would Threaten European Energy Security
32 Rettman, Andrew: Eastern EU Leaders to Warn Juncker on Nord Stream II
Finally, and still under discussion, is the legality of Nord Stream II under EU law. Poland has been particularly vocal, arguing that an operating Nord Stream II is in direct contrast to the spirit of sanctions, and could violate the EU Energy Union’s supply security and ownership liberalization goals \(^{(33)}\). With Gazprom’s recent success in overcoming a Polish-led antimonopoly case regarding increased Russian capacity use of the OPAL pipeline, Gazprom’s market share looks to be secure at this time, with potential to grow. However, much still depends on the success establishment of Nord Stream II. The coming months should provide insight into the Nord Stream II decision, and with it the future of Gazprom’s position in V4 gas markets.

3. EU-led & V4-led Counter-Initiatives

a. The Three Seas Initiative & North-South Corridor

Having discussed the most pressing Russian-led developments for V4 natural gas supply security, we turn to EU-led and V4-led initiatives. While Gazprom has pursued the construction of the Turk Stream and Nord Stream II pipelines to maintain and grow their position in Europe, Czechia, Hungary, Poland, and Slovakia have been involved in a number of counter-initiatives. Each such effort is ideologically linked to the Three Seas Initiative, created to counter the Gazprom hegemony in Central, Eastern, and Southern Europe. The Three Seas Initiative, also known as the Baltic, Adriatic, and Black Sea initiative, is usually referred to as simply Three Seas. Membership consists of the Baltic states (Estonia, Latvia, and Lithuania), the V4, Austria, Slovenia, Croatia, Romania, and Bulgaria. Three Seas provides a forum for V4 leaders to collaborate with other regional decision makers in order to develop infrastructure and diversify their energy supply sources \(^{(34)}\). The most notable projects discussed involve the development of the liquefied natural gas industry in their respective countries and the creation of a north-south energy corridor for providing greater infrastructural flexibility.

\(^{(33)}\) Wyciszkiewicz, Ernest: Polish-Russian Energy Relations Following the Aggression against Ukraine – Part 2

\(^{(34)}\) Reza, Zainab: What Is The Three Seas Initiative?
b. Liquefied Natural Gas Growth

Compared to pipeline transported natural gas, liquefied natural gas (LNG) is growing seven times faster. Currently making up 32% of globally traded natural gas, by 2035, the LNG market is projected to account for 50% of globally traded gas. As LNG is moved via sea transport, in a similar way to the crude petroleum, cargoes can be redirected to equilibrate supply and demand around the world (35). The development of the LNG market provides an unprecedented opportunity for supplier diversity for V4 countries. Currently LNG markets are more developed in East Asia, but there is evidence of growth in Europe now as well. Of Three Seas members, there are only two operational LNG regasification terminals; the Świnoujście LNG Terminal is located in Poland and the FSRU Independence Terminal is located in Lithuania. Five more terminals are planned – the Muuga (Tallinn) LNG terminal (Estonia), the Paldiski LNG terminal (Estonia), the Skulte LNG terminal (Latvia), the FSRU Polish Baltic Sea Coast terminal (Poland), and the Krk Island terminal (Croatia). For V4 countries, the two Polish terminals and single Croatian terminal are of primary significance.

With the establishment of these terminals, Poland (and therefore the V4), can look outside the European continent for their natural gas supply. In 2016, Poland’s Świnoujście LNG Terminal received their first delivery via a long-term contract with Qatargas. The following year, the first shipment of American LNG arrived (36). While the American shipment was only a short-term transaction designed for testing the capabilities of the Świnoujście LNG Terminal, the potential is exciting. Due to the expected growth of LNG, Gazprom and Novatek have also planned five of their own LNG terminals to be focused on the European market. Only one, located on the Yalma peninsula and owned by Novatek, is currently operational. Yet, even if Gazprom (or Novatek) becomes an LNG power, this works against Russian natural gas monopoly power.

35 BP Global: The Effect of LNG Growth on Global Gas Markets
36 Wyciszkwiewicz, Ernest: Polish-Russian Energy Relations Following the Aggression against Ukraine – Part 1
As the LNG market grows, a globalized market will develop to equalize world supply and demand with prices tied to global spot prices. The Henry Hub natural gas spot price, or some other contract for natural gas prices, will develop into a price benchmark, similar to the petroleum market’s Brent crude. With prices tied to globalized benchmarks instead of the monopoly power of a politically-influenced supplier, V4 bargaining power would increase drastically during contract negotiations with Gazprom.

c. V4 Dual-flow Infrastructure Potential

To supplement the growth of the LNG market, V4 nations are also exploring new pipeline options to further counter Gazprom. Via the planned Baltic Pipe, which would connect Poland to Norwegian natural gas markets, Poland could become a gas hub for the Central and Southern European markets. This strategy is directly tied to Three Seas and the development of a North-South energy corridor. As exciting as this is, the infrastructure to transport natural gas to more southern V4 nations is still needed. Currently a Polish-Czech pipeline exists with dual-flow capabilities allowing for the transmission of Polish gas to Czechia (37). The proposed Eastring pipeline would provide dual flow ability between Slovakia and Hungary (38). However, a connection is still lacking between Poland and Slovakia, and therefore Hungary. Similarly, dual-flow capacity is also lacking between Hungary and Croatia, but with the completion of the Croatian Krk Island LNG terminal, there is hope that this will be constructed in the near future as well. With the development of a complete North-South corridor with dual-flow capabilities, a V4 not dependent on Russian gas becomes a much greater possibility.

d. Southern Supplier Development

Lastly, there exists additional potential for V4 nations to receive natural gas supply from more southern sources. Currently, two new pipelines of great significance are being developed that would

37 Gawlikowska-Fyk, Aleksandra: How the European Union Is Shaping the Gas Market in Poland  
38 The Slovak Spectator: spectator.sme.sk/c/20684893/slovakia-and-hungary-sign-memorandum-on-eastring-project.html
connect Europe to Azerbaijani gas: the Trans-Anatolian pipeline (TANAP) and the Trans-Adriatic pipeline (TAP). Acting as an extension of the South Caucasus Pipeline (SCPx), which begins in Azerbaijan, TANAP would create a gas route reaching the far south-eastern edge of the EU. From there, TAP would carry Azerbaijani gas through Greece and Albania, underneath the Adriatic Sea, to Italy. From there, via the dual-flow Trans Austria Gas (TAG) pipeline, this gas could reach the V4 markets (39).

The development of TANAP and TAP are integral parts of a proposed South Gas Corridor to complement the previously mentioned Polish diversification efforts. While TANAP faces Russian challenges due to both Russia and Azerbaijan sharing Caspian Sea borders, there is evidence of both northern and southern efforts to realize a true North-South gas corridor aligned with the goals of Three Seas. Via Three Sea nations’ (and therefore V4 nations’) efforts to develop LNG capabilities, dual-flow infrastructure, and northern and southern pipeline alternatives, Gazprom (and Russia) faces significant challenges to their key European market in the coming years.

39 Trans Adriatic Pipeline: www.tap-ag.com/the-pipeline/the-big-picture/southern-gas-corridor
Conclusion

The goal of this second essay was to explore the connection between the V4 nations of Hungary, Czechia, Poland, and Slovakia and Russia within the context of the energy industry and EU sanction policy. I believe we have completed this in a thorough and robust manner. EU sanctions target Russian entities whose primary business interests are within the petroleum industry – Rosneft, Gazprom Neft, and Transneft. With the exception of Rosneft, EU sanctions do not affect Russian natural gas-focused businesses (e.g. Gazprom) though, contrary to US sanctions. Despite recent strides to decrease energy imports and intensity, all V4 nations demonstrate considerable dependency on petroleum and natural gas to satisfy their energy needs. Russia ranks as the #1 source of these products for each V4 nation\(^{(40)}\).

While Russia possesses a greater V4 import share of crude petroleum than natural gas, oil markets showcase markedly different transport and price structures, which render Russian dominance much less strategically important. The robust nature of the European midstream when combined with a globalized market pricing design allow V4 nations to respond sufficiently to Russian oil supply shocks. Unfortunately, equivalent hedges to the Russian natural gas hegemony are not present for Czechia, Hungary, Poland, and Slovakia. Via majority state-owned Gazprom, Russia is the most critical supplier of natural gas to Central Europe by a wide margin.

Supplementing the EU’s own sanction policy, the EU has suggested countries that show strong Russian natural gas dependencies, like the V4, should attempt to diversify their energy suppliers. Russia aims to negate these efforts by constructing additional pipelines into the heart of the EU which bypass Ukraine. Via the Turk Stream pipeline and Nord Stream II pipeline, Gazprom has dedicated considerable resources to maintaining their monopoly. While both pipelines either have faced challenges (Turk Stream) or continue to face challenges (Nord Stream II), the construction and finalization of both look likely in the near future. To counter these Russian-led challenges, the V4, in collaboration with other Central, Eastern,

\(^{(40)}\) Observatory of Economic Complexity: atlas.media.mit.edu/en/
and Southern European countries have banded together to create the Three Seas Initiative with the stated goal of creating a North-South energy corridor. Through this informal alliance, equivalent efforts have been dedicated to the development of the LNG industry, appropriate dual-flow energy infrastructure, and southern gas pipeline alternatives (TAP & TANAP). With both sides, V4 and Russian, exerting resources to counter one another for market power, the future of the Central European energy industry is as dynamic and geopolitically critical as ever before. With all preceding initiatives either having their impetus rooted in EU sanction policy or affected by it, the future of V4 energy security looks to change significantly in the coming years, hopefully in favor of the V4 countries.
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Figure 17. European, African, and Middle East LNG Terminal Map

Source: Gas Infrastructure Europe