

Pipeline Politics, A Single Market, and the Rise of Renewable Energy: Challenges and Pathways for European Energy Security

Introduction

At the end of 2018, Gazprom reported a record high in natural gas exports to Europe, exceeding 200 billion cubic meters (bcm) for the first time.¹ As of early January 2019, the United States (US) ambassador to Germany threatened to sanction German companies that will continue to be engaged in the controversial Nord Stream 2 (NS2) project, aiming to build another direct pipeline from Russia to Germany circumventing transit states.² Just a few months earlier President Trump boldly announced that Europe would buy “vast amounts” of US liquefied natural gas (LNG) and criticized Germany as being held captive by Russian energy exports.³ Moreover, Turkey threatened Cyprus over the exploitation of newly discovered gas on disputed territory, and Saudi Arabia, the world’s largest exporter of oil, announced another \$2 billion investment in solar and carbon complex facilities as part of 12 large renewable energy projects in the country.⁴ These headlines illustrate the continuing dependence of Europe on Russian natural gas, the ongoing shift in global energy markets due to the shale gas revolution, new technologies, renewable energy, as well as, competition over customers and suppliers. This article will focus on energy security, commonly defined as “the uninterrupted availability of energy sources at an affordable price”⁵, for the EU, but will also consider geopolitical aspects and aims at identifying challenges and pathways forward.

The EU imports more than half of all the energy it consumes. More specifically, approximately 90% of its crude oil and 70% of its natural gas are imported, with Russia being the largest supplier of both.⁶ In 2016, roughly, 40 % of total gas imports came from Russia, followed by Norway with about 25%, Algeria, and Qatar with 13% and 12% respectively.⁷ Looking at the national level, one can see that in particular central and eastern European countries

(CEE) are highly dependent on Russian gas supplies. Bulgaria, the Czech Republic, Estonia, Latvia, Hungary, Austria, Poland, Romania, Slovenia, Slovakia, and Finland import more than 75% of their gas from Russia.⁸ Furthermore, gas was used for as much as a quarter of total primary energy consumption in the EU and by looking at broader and more long-term scenarios of future energy demands it is expected that the share of natural gas in the EU’s energy mix might even further increase.⁹ The decline of domestic gas production in Europe and its relatively mild environmental impact compared to coal and oil ensures continued demand, making it an intermediary commodity in the transition towards a less carbon-intensive economy.¹⁰ At the same time, expected decreases in exports from Norway and Algeria would further increase dependence on Russian supply of gas.¹¹ This requires the EU to find about 120 bcm of gas imports a year by 2035.¹² Russia also provides 30% of oil imports to the EU.¹³ However, the fact that the oil market is a truly global one, due to easier shipment and storage possibilities, also results in a unified global price for oil. A global market means that imports from only a few countries are not detrimental to energy security since many more sellers exist which could step in, in case of interrupted supply. Gas, however, is mostly traded regionally, not internationally, which results in fragmented markets with different prices. In the European case, gas is commonly supplied through pipelines making buyer-seller relationships highly inflexible and adding the layer of geopolitical considerations.¹⁴ The abundance and decreasing importance of coal in Europe combined with the domestic character of energy production when it comes to renewable and nuclear energy makes European energy security mainly a question of security of gas supplies.

The Pipeline Legacy

The collapse of the Soviet Union meant that the immense network of pipelines linking the Siberian gas fields and Europe are now crossing numerous countries without an overarching regulator. This creates tensions between destination, transit, and supplier countries due to problems of governance because these pipelines can be abused as a political tool. Ukraine, which has been the transit land for 43% of Russian gas supplies, is of utmost importance in that regard.¹⁵ The high sunk costs from Soviet investments in pipelines also mean that Russian gas is comparably cheap considering the large distances between the Russian heartland and EU customers. Hence, under current market conditions, Russian natural gas remains the most competitive commodity.¹⁶

Russia’s use of energy as a political weapon to influence the domestic policies of states is no secret.¹⁷ The interrupted gas supplies for Europe during the “gas wars” between Ukraine and Russia in 2006 and 2009 as well as the 2014 Russian annexation of Crimea were a wakeup call for European states. It highlighted the need to find alternative suppliers and thus led to the adoption of the EU Energy Security Strategy (ESS). The ESS from 2014 rests on several key pillars: The creation of a single energy market, diversification of suppliers, the use of new technologies alongside increased energy efficiency, the coordination of national energy policies and strengthening of solidarity among member states, as well as speaking with one voice in external energy matters.¹⁸

An Incomplete Energy Union

The Energy Union is the attempt to create a single market for energy trade and electricity by liberalizing heavily regulated industries and fostering the integration of pipeline networks and power grids. Thereby, the EU is aiming to prevent pos-

sible price segmentation and the punishment and reward of individual member states through different energy prices. Greater connectivity within the EU market also means that once gas enters the EU market it can be sold and shared more easily between the individual member states.¹⁹ The problem with this strategy is that implementation of the third energy package is slow and incomplete and that many states still have solid bilateral relations with Russia undermining a common European energy policy.²⁰

Moreover, even if Russia would not be able to discriminate between individual members, a full stop of gas deliveries would still affect the EU market as a whole. Russia prefers keeping long-term contracts with individual member states, resists joining the European Energy Charter, which would require it to open its own market to competition from EU companies, and sees its abundance of natural resources as a tool in its foreign policy repertoire.²¹ For these reasons, EU member states try to diversify their suppliers to reduce reliance on Russia.

Escaping Russian Pipelines

The “southern energy corridor” is an initiative to establish new supply routes for oil and gas from central Asia, the Caspian Sea region and the Middle East to the EU market bypassing Russian controlled pipelines. The most ambitious project in this regard was the Nabucco pipeline project that was ought to transfer natural gas from Azerbaijan (and possibly Iran and Kazakhstan) over Georgia, Turkey, Bulgaria, and Romania all the way to Baumgarten in Austria, the main entry point to the western European gas market. However, it failed to be economically viable and to ensure sufficient supply for its pipes. Russia contributed to that huge failure, by announcing a competitor project called south stream pipeline, which undermined the economic rationale of Nabucco.²² As a consequence of this failure, the much less ambitious project of the Trans-Adriatic-Pipeline (TAP) was constructed, which does little to reduce CEE countries dependence on Russia, as it only supplies

Greece and Italy by connecting to the Trans-Anatolian Gas Pipeline (TANAP) that delivers gas from Azerbaijan to Turkey but would only meet 2% of EU demand.²³

The Russian south stream project was canceled due to anti-trust investigations and non-compliance with EU legislation.²⁴ The heir of this project is the ongoing TurkStream project that will connect Russian gas through the Black Sea with Turkey and end close to the entry point of TAP. However, Russian gas going through TurkStream will compete with gas coming from Azerbaijan since under EU law it is allowed to use the same pipeline (TAP) if connected, thus it might even further increase Russia's position.²⁵ Turkey, by hosting TANAP and TurkStream, will likely become a major energy hub and thereby places itself in a strong position vis-à-vis Europe. Against the background of increasing authoritarianism, antagonizing foreign policy, and a closer relationship with Russia, the EU should also consider, whether increased reliance on Turkey is a wise decision in the long term.²⁶

At the same time, current plans to build an additional pipeline directly linking Russia to its single biggest customer in Europe, Germany, through the highly controversial Nord Stream 2 (NS2) project are in its final steps. NS2 would add a capacity of 55 bcm to the already existing pipeline leading to an overall capacity of 110 bcm, which would be enough to transport about a quarter of the total European gas demand (about 410 bcm in 2017) without crossing any transit states.²⁷

The CEE countries, and in particular Poland and Ukraine, are irate about this project but also the European Commission (EC), the European Parliament as well as the US administration are not welcoming NS2. The main argument opposing NS2 is that it would severely reduce Russian dependence on transit states in CEE and thus eradicate their bargaining power vis-à-vis Russia as well as their considerable revenues arising out of transit fees for gas. Another worry is that an additional pipeline will be used to justify increased Russian military presence in the region in

order to allegedly protect the pipeline.²⁸ German politicians and business, on the other hand, are arguing that this project is a purely commercial endeavor that would foster European energy security by addressing the gap of further supplies in future demand projections and that it would not entail the end of Ukraine as a transit country.²⁹ The current Romanian EU presidency and the EC tried to extend EU legislation to NS2, which could cause a stop of the project due to conflict with the “third energy package” since Gazprom would be the owner of the pipeline and the sole supplier at the same time. Since NS2 pipelines are offshore, the question of whether EU law applies arose.³⁰ However, constructions already started and should finish at the end of 2019. After a short Franco-German dispute, a compromise was reached leaving it to Germany to apply EU regulations, but extended EU oversight when it comes to transparency and shared usage.³¹ Besides possible security implications for countries in Russia's “near abroad” not having the tools to block Russian gas supplies in their repertoire anymore, NS2 in combination with TurkStream might also allow Russia to selectively supply different regions in Europe. By creating a Moscow-Ankara and Moscow-Berlin axis with different hubs and prices for the southern and northern European gas market, Russia could increase its leverage even further.³²

Moreover, the countries of the Middle East and North Africa region (MENA) play an important role for the EU, in particular Algeria by being the third largest gas supplier to the EU through pipelines going to Spain and Italy. However, without much notice by the EU, China and Russia are getting seriously involved in the wake of the US losing interest in this region.³³ Russian and Chinese state-owned oil and gas companies are keen on getting a foothold to secure future supplies and establish long-term contracts. Russia is increasing its gas exploration and production in Algeria, Egypt, Nigeria, and Mozambique. Russia has no lack of those resources at home, but Europe does and looks to the MENA region in order to diversify its supply chain. A hypothetical full-blown crisis with Russia, with a complete blockade by Moscow,

might consequently also mean a stop of gas coming from Algeria and other MENA countries if Russian and Chinese state-owned companies become increasingly involved in the region.³⁴

LNG as a Geopolitical Game Changer?

Many observers and politicians point to LNG as an alternative to Russian pipeline gas. The current US government seems keen to promote its LNG industry in the world and to become a major energy exporter. Half of all EU member states already import LNG, mainly from Qatar. In 2017, LNG imports made up 14% of total gas imports.³⁵ However, struck agreements between the US and the president of the EC to foster US LNG exports to the EU through further investments in storage capacities are for several reasons unlikely to significantly change EU-Russian energy relations any time soon.³⁶

Firstly, the EU already has large import capacities for LNG. By 2022, it is estimated that the EU could have a regasification capacity of around 275 bcm. However, current capacities are to three-quarters empty.³⁷ Moreover, this infrastructure is missing in south-eastern Europe and CEE without access to the sea. In the Baltics, on the other hand, investments in LNG terminals resulted in cheaper prices since it forced Russia to shift away from long-term oil pecked contracts to spot prices to remain more competitive than LNG.³⁸

Secondly, the market decides where LNG will flow. LNG prices in Asia remain significantly higher than in Europe, giving few incentives to sell LNG to the EU. US companies decide for themselves and will sell their LNG where it is most profitable. Also, EU firms will buy from the most competitive supplier, which does not have to be the US, but could also be Russia. So far, Europe remains “the LNG market of last resort” taking only LNG that no other market wants or is willing to pay for.³⁹ Even in optimistic scenario-models, LNG imports will unlikely change the import dependency of CEE.⁴⁰

Furthermore, Russia also invested in LNG technology and infrastructure and large

LNG carriers are reaching Europe from Russia’s gigantic Yamal project in Siberia.⁴¹ Moreover, as the Arctic is melting and new sea lines for shipments are opening up, in particular, Russian LNG exports to Europe and Asia are likely to benefit due to lower shipment costs and thus lower prices for consumers.⁴²

The prospects for a European shale gas revolution similar to what had happened in the US is unlikely for several reasons. The geological foundations of Europe’s shale reserves are different from that in the US leading to a more difficult, expensive extraction process, thus higher prices for the consumers, and therefore being hardly competitive against pipeline gas. Moreover, high population density in Europe, a lack of expertise and capital for investments, as well as environmental concerns and stricter regulations make large-scale extraction unlikely.⁴³

The Rise of Renewable Energies (RE)

The EU is on track to achieve its 2020 targets for RE and energy efficiency and decided that by 2030 at least 27% of its final energy consumption should come from RE.⁴⁴ This increasing use of RE is expected to reduce energy imports by €58 billion in 2030 and makes the EU a world leader in the transition towards a less carbon-intensive economy.⁴⁵ In addition, energy efficiency plays an important role in the EU’s consideration of energy security. In June 2018, the EU institutions reached a political agreement that set a binding energy efficiency target of 32.5% until 2030.⁴⁶

With RE becoming cheaper and competitive compared to traditional energy sources, investments in RE are definitely a way to reduce reliance on external suppliers. RE is at the same time also necessary considering the need to cut emissions.⁴⁷ However, self-sufficiency through RE is only considered to be a long-term scenario. Looking at the EU Energy Roadmap for 2050, RE’s share is expected to increase drastically, however, the demand for gas will remain stable at around 25% of final energy consumption, thus, also in the cases of op-

timistic scenarios, the EU will in one way or the other need to find a means to secure its supplies of natural gas.⁴⁸

Lessons and Pathways for the Future

In the short-mid term, the EU is unlikely to achieve full energy security and independence as it lacks means to diversify its suppliers of natural gas. Russia, so far, has largely been successful in preventing European states from significantly reducing their reliance on Russian pipelines. However, the global LNG market will further expand and develop and the US will become a major player in the global LNG market by 2020. With new suppliers like Australia also emerging as major exporter, the gas market of the future might look more like the global oil market today, with a convergence of prices, less fragmented markets and hence more fluid buyer-seller relationships. This will increase pressure on Russian long-term oil pecked gas contracts, forcing them to accept cheaper spot trading prices or to face decreased market share. However, in the absence of such a global market, LNG will more likely flow to Asian or Latin American markets promising higher revenues and surging demand. The melting of the poles and Russia’s own LNG ambitions do not increase the likelihood that non-Russian LNG will substitute for Russian gas.

Plans for a EURO-MED pipeline transporting oil and gas from Egypt, Cyprus, Lebanon, and Israel to the EU might be an alternative. This could transform this region into an energy hub, add stability, and shift supply lines away from Turkey and Russia towards longstanding partners like Israel and Egypt or EU members like Cyprus, which recently discovered large quantities of natural gas on its shore. Studies show the feasibility of such an endeavor, which is also a “project of common interest” of the EU.⁴⁹

The unification of energy grids, the expansion of storage capabilities and the rise of RE are the most promising, but long-term ways to achieve energy security alongside meeting climate protection targets. However, so far, the EU is lagging behind

when it comes to patents for RE, with China leading the way and having ambitious projects like the “Global Energy Interconnection” that will link every continent with undersea cables to trade future green electricity.⁵⁰ The concentration of such a future technology sector in the hands of a few (Chinese) companies can also not be in the interest of the EU.⁵¹

Moreover, in the context of falling prices for energy due to higher competition and the spread of RE, the EU has to consider the effect of lower prices on its periphery. A recent study concluded: “Europe will see persisting instability on its doorstep.”⁵² It is obvious that rentier states that rely on energy exports to Europe will face drastic challenges and possible collapse during the transition towards a less fossil fuel based economy.⁵³ Considering continued unrest in rentier states’ economies and the EU’s periphery, one has to find a way to diversify the energy mix without causing a collapse of previous suppliers.

This brings us to another option for the EU: To help countries in its neighborhood, in particular in the MENA region, to diversify their own energy mix towards RE through the sharing of expertise and technology in exchange for natural gas contracts. These countries themselves face increasing energy demand, due to drastic increases in their populations, and by helping them to meet their energy needs with RE instead of gas, these resources remain available for export to Europe.⁵⁴ This has several advantages: It might help countries to meet domestic energy demand in a way not harmful to the environment. It would also allow the European states to fulfill their climate commitments made under the Paris agreement⁵⁵ and at the same time to free up gas supplies in their neighborhood to diversify away from Russia. Large-scale engagement also serves as a way to counter Russian and Chinese ambitions in this area but would require collective engagement and heavy investments to be credible and attractive for targeted states.⁵⁶

Without the adoption of coherent geopolitical strategic thinking and possibly large quantities of money spent, Europe will not

achieve anything close to energy security or diversification of suppliers in the short or mid-term. The long-term path towards energy security through RE is set out. However, Europe is falling behind in patents, research, and development – thus leaving China in the competition over becoming the world leader in the RE tech sector in a unique and dominant position.⁵⁷ To conclude, Europe should strive toward becoming more resource-efficient and less energy-dependent in order to determine its own fate in this highly competitive sector in a sovereign and democratic manner that protects the interests of both the EU and its member states.

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