A Meaning for the EU Energy Dependency: What Next?

Oana-Antonia COLIBĂȘANU
Marina Corina JIPA
Department of International Relations and European Integration
National University of Political Studies and Public Admnistration
Bucharest, Romania
antonia.colibasanu@dri.snspa.ro
jipa.marinacorina@gmail.com

Abstract. *This article focuses on establishing whether there is indeed a dependency that the EU has on third countries when it comes to its energy imports and whether such a dependency is relevant in the context of the EU current goals under the ambitious climate change agenda. The research also looks to see whether Russia is indeed a key partner for Europe when it comes to energy. To answer these questions, we consider the context of the EU energy sector by analysing its consumption and production levels over the last decade, before the Covid-19 pandemic. After gathering evidence from data available and analysing it, we conclude on pointing out the future questions needed to be further answered considering the current challenges that the European Union is facing when it comes to the energy sector.*

Keywords: *energy dependence, energy production, imported energy, primary energy, European Union, Russia.*

JEL: P18, K32, O13, Q47.

1. Introduction

Energy is an essential component for the economy and society. Energy sources can be classified into primary energy sources (the natural sources as fossil energy, nuclear energy, wind energy, solar energy, geothermal energy and hydropower), from which electricity can be obtained – as a secondary source of energy[1]. In the context of the increasing interest in entering the global energy markets and the necessity of the stability of energy supply flows, the geopolitics of energy interdependencies deals with a set of criteria that influences tensions between states and determines the balance of power between them. Adding to this matter the objectives of the new climate policy, the role of renewable sources increases as the public opinion becomes more and more involved in the practical implementation of the "zero net carbon" concept.

Two types of forces are involved in the geopolitical analysis of global energy interdependencies. First, there is the global game of power: the energy producing countries are trying to gain both profit and political influence over the consumer countries that they serve, among which the regions where energy producers need to grow their political influence (like Eastern Europe for Russia) are of a particular importance. Second, there are the concerns about reshaping the energy system based on the climate agreement and the process of transitioning from fossil fuels to renewable sources.

The transition from the present – where the consumption of oil, coal and natural gas represents more than 80% of the total resources – to a world that mainly uses renewable energy sources – represents the "energy transition" and involves costs and new technologies, which states have to assume. Climate policy is set to be a key factor in global geopolitics. In this regard, 195 countries signed the Paris Agreement in 2015, thus creating a framework for a benchmark in the global evolution of policies, in order to reduce climate impact. Following the signing of the Paris Agreement, the European Union has undertaken the achievement of climate neutrality by 2050. The adopted European Green Deal set a more ambitious target: to make the EU's economy and regulations fit for reducing the net greenhouse gas emissions of at least 55% by 2030. To achieve this goal means transforming European society and the economy in a cost-effective, fair and

[1] Stratos.ro *Tipuri de energie și cum afectează mediul înconjurător*. Available at: https://stratos.ro/tipuri-de-energie-si-cum-afecteaza-mediul-inconjurator/ (Accessed: 5 January 2022).

socially balanced way. The European Union has reaffirmed its commitment to the green transition by adopting legislative changes on greenhouse gas emissions, renewable energy and energy efficiency.

During the last decade, the European Union has seen a relatively uniform increase in the production of energy from renewable sources (48.3%), largely replacing the production of energy from other sources. As a result, the production of primary energy from fossil fuels decreased, in 2019 being 8.6% lower than ten years ago.[2] However, not all countries have increased their production from renewable sources at the same time or in the same way.

Currently, however, 80% of the energy consumed in the UE comes from fossil fuels.[3] Thus, there has been an increase in the energy imports from countries outside the European space. In 2019, more than half of the EU's energy needs (60.7%) came from imports, mainly from solid fossil fuels and natural gas exported by Russia - increasing the EU's energy dependence on Russia.[4]

2. Energy security in the EU

The European Union's energy policy focuses on a series of measures aimed at building an integrated energy market and a sustainable energy sector, while ensuring the security of energy supply in the EU. Within the common energy policy of the European Union, some aspects are the subject of shared competences (article 194, paragraph 2, Treaty on the Functioning of the European Union), in which each Member State has the right to establish both the conditions of exploitation of its own energy resources and the structure of the energy supply mix.

The objectives of the EU energy policy are aimed at both the energy security (thru diversification of sources with strengthening cooperation and solidarity between member states; development and modernization of infrastructure necessary for the proper functioning of the integrated market and elimination of technical or

[2] Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics- explained/index.php?title=Energy_production_and_imports#The_EU_and_its_Member_States_are_all_net_importers_of_energy (Accessed: 5 January 2022).
[3] Yergin, D. (2020). *The New Map*, 2020, p. 107.
[4] Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports#The_EU_and_its_Member_States_are_all_net_importers_of_energy (Accessed: 5 January 2022).

regulated barriers; reduction of dependence on imports) as well as at climate change (increasing energy efficiency, transitioning to a low-carbon economy, promoting and prioritizing research and innovation in clean energy technologies).[5]

For the EU, energy security means greater flexibility and diversity in supply, together with boosting the formation of a single energy market, and with increasing the interconnections between gas pipelines or electricity transportation networks. The piping systems have been redesigned to change the direction of gas flow if necessary. Investments in LNG (Liquefied Natural Gas) terminals and storage systems have increased. Initiatives and policies aiming to reshape the entire European energy infrastructure have been promoted; and legislation designed to promote fair and transparent competition had been adopted. On the subject of climate, the EU has adopted regulations promoting decarbonisation, thus increasing energy efficiency and facilitating the transition to renewable energy. (Yegin, 2020, p. 88)

3. European Union energy dependency rate

3.1. The EU as a global actor

The European Union is an economic and political union of 27 states, covering a total area of 4,233,255.3 km². It is located between the North Atlantic Ocean (west) and Russia, Belarus, Ukraine and the Black Sea (east) and has a total population of about 447 million.

The degree of urbanization is high as 75% of the population lives in cities, which makes it one of the most important energy consumers and one of the top polluters in the world. However, the phenomenon of urbanization is in a continuous expansion, the delimitation between the urban and the rural becoming more and more blurred at the average European level.[6] Within the Member States, however, the situation is different. In the eastern states there is a big difference in the development of cities - the cities topping the charts are between 5 to 10 times larger than those ranking just under them. The large urban agglomerations are

[5] European Parliament (2021). *Politica energetică: principii generale.* Available at: https://www.europarl.europa.eu/factsheets/ro/sheet/68/politica-energetica-principii-generale (Accessed: 5 January 2022).
[6] Agenția Europeană de Mediu (2021). *Mediul urban.* Available at: https://www.eea.europa.eu/ro/themes/urban/intro (Accessed: 5 January 2022).

located in west Europe (for example, the large urban-industrial concentrations in the West German states). Malta is the state with the highest degree of urbanization (90%), with Slovenia at the opposite pole (50.8%). Romania is at the bottom of the ranking, with a degree of urbanization of only 54.9%.[7]

The European Union stands out for its dominance of the industrial sector, with agriculture ranking last as the European average. In the last 20 years, information technology, professional services, real estate and public administration have increased, observing a declining trend in the share of industry, agriculture and construction. There are several differences at the individual level of the Member States. For example, the industry sector is more predominantly developed in Germany (car construction, textile industry, leather), France has an important share in the public sector (administration, education, health and social assistance), Romania is on the first place in terms of the share of agriculture, while tourism represents a major share of the economy in countries such as Greece, Italy, Cyprus, Malta.[8]

In order to support and standardize the development of Member States, the EU has developed regional policies that consider specific social and economic challenges. In this context, the European transport networks are in a continuous development and modernization, managing to ensure efficient and safe mobility in all regions.[9] The common policies established in Member States are the single market, the customs union and the monetary union. All together, these regulations have allowed the increase in mobility of goods, people, services and capital, leading to the development of the EU economy as we know it today. The European energy policy, through the full integration of the internal energy market, ensures the free movement of energy, without technical or regulatory barriers on European Member States.

The energy infrastructure of the EU consists of interconnected energy networks, materialized through 9 priority corridors (1 for oil, 4 for gas and 4 for electricity)

[7] Neamţu, L.; Neamţu, A. *Piața europeană și caracteristicile sale*. Available at: https://core.ac.uk/download/pdf/6233894.pdf (Accessed: 5 January 2022).
[8] Radio France Internationale Romania (2020). *Ce produce Uniunea Europeană. Industria are cea mai mare pondere în PIB, agricultura, cea mai mică.* Available at: https://www.rfi.ro/economie-126703-produce-uniunea-europeana-industria-pondere-pib-agricultura (Accessed: 5 January 2022).
[9] European Union (2009). *Politica regională a Uniunii Europene, o sursă de inspirație pentru țările din afara UE?.* Available at: https://ec.europa.eu/regional_policy/sources/international/pdf/external_mo.pdf (Accessed: 5 January 2022).

and 3 priority thematic areas (cross-border carbon dioxide networks, electricity networks and smart grids). The European energy policy supports the diversification of energy sources, the development of gas and electricity supply routes and interconnections on a north-south axis, the creation of several liquefied natural gas terminals, and the opening of the internal market.[10]

3.2. Energy mix in the EU

In 2019, the total amount of energy consumed in the EU was 935Mtoe.[11] The energy mix of resources of the EU in 2019 came mainly from 5 primary sources: oil products (36.4%), natural gas (22.4%), renewable energy (15.3%), nuclear energy (13.1%) and energy from solid fossil fuel (12.6%).[12]

The mix of energy consumption has a different composition for each Member State (the choice of resources for domestic consumption is one of the areas of shared competences of the Member States). The types of resources intervene in the energy mix of the internal consumption of each state with a differentiated share. Thus, petroleum products have a significant share in the total amount of energy available for consumption in Cyprus (90%), Malta (87%), Luxembourg (65%). Natural gas accounts for a large percentage of the energy mix of consumption in countries such as Italy (39%) and the Netherlands (37%), solid fossil fuels have a high share in the case of Estonia (60%) and Poland (43%), while the energy for consumption comes largely from nuclear energy in France (with a percentage of 41%) and Sweden (31%). The significant share of renewable energy in the energy mix of consumption in countries such as Sweden (41%) and Latvia (37%)is also noteworthy.[13]

In the EU, 2/3 of the total energy consumed is used by final consumers, representing the following economic sectors: industry (a sector that consumes 32% of the amount of energy that goes to final consumers), transport of people or goods (consuming 28%), household consumers (consuming 24%), and agriculture

[10] European Parliament (2021). *Politica energetica: principii generale.* Available at: https://www.europarl.europa.eu/factsheets/ro/sheet/68/politica-energetica-principii-generale (Accessed: 5 January 2022).
[11] Eurostat (2021). *Energy statistics – an overview.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Primary_energy_production (Accessed: 5 January 2022).
[12] Eurostat (2021). *Where does our energy come from?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2a.html?lang=en (Accessed: 5 January 2022).
[13] Ibid.

(consuming 3%). The remaining 1/3 of the total energy is used in the development of energy production processes (secondary energy sources), its transport and energy transformation.[14]

To analyse the types of energy used by final consumers it is relevant to use the consumption mix statistical data available. At the EU level, the 2019 consumption mix shares were: 41% of the total final consumption was the consumption of petroleum products (with the final use of fuel or heating), 21% natural gas, 20.8 % electricity consumption, 10% was renewable energy consumption (such as wood, solar or geothermal biogas - used to heat rooms or get hot water), 2% fossil fuels (especially coal). Renewable energy consumption is actually higher than 10%, because some of the renewable resources (hydropower, wind energy and solar photovoltaic energy) are used as secondary sources to obtain electricity.[15]

3.3. Energy production in Europe

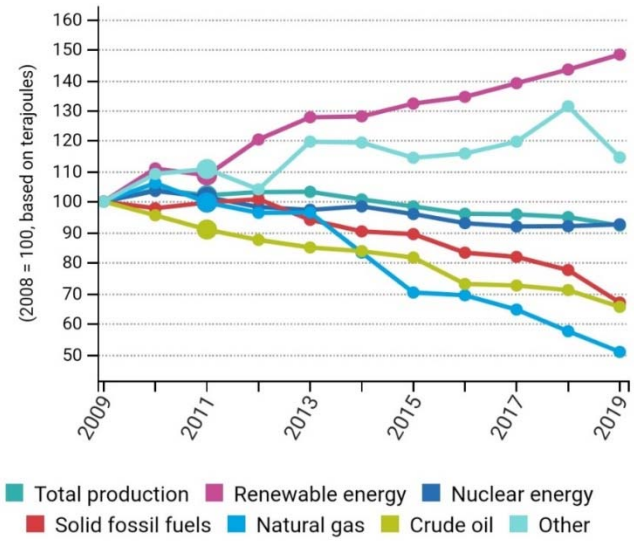
In the context of the Paris Agreement and the assumption of achieving the goal of climate neutrality, EU energy production is moving towards a green zone. Thus, in 2019, from the total EU production of 615 947 Mtoe,[16] (25 788 Petajoule (PJ))[17], the largest contribution was from renewable energy (37% of total energy produced in the EU), followed by nuclear energy (32%), solid fossil fuel (19%), natural gas (8%) and oil (4%).[18]

In the case of each Member State, the values of primary energy production differ for each state. Thus, in France, the production represented 20% of the total at European level, Germany achieved 17.1%, Poland 9.6%, while Italy and Sweden had 6%.[19]

---

[14] Ibid.
[15] Eurostat (2021). *What kind of energy do we consume in the EU?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-3a.html?lang=en (Accessed: 5 January 2022).
[16] Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports (Accessed: 5 January 2022).
[17] Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports#The_EU_and_its_Member_States_are_all_net_importers_of_energy (Accessed: 5 January 2022).
[18] Eurostat (2021). *What do we produce in the EU?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2b.html?lang=en (Accessed: 5 January 2022).
[19] Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports (Accessed: 5 January 2022).

Graph 1: *The production of primary energy by fuel type, EU, 2009-2019*



Source: Eurostat (2021) *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports (Accessed: 5 January 2022).

The amount of energy produced in the European Union comes from a wide range of primary energy sources: solid fossil fuels, natural gas, oil, nuclear energy and renewable energy.[20]

Each Member State has its own mix of energy production. Thus, in France, a large share is held by nuclear energy (78% of total national energy production), as in Belgium (71%) or Slovakia (58%). In countries such as Malta, Latvia, Portugal and Cyprus, national energy production is based more than 90% on renewable energy. In the Netherlands, the main source is natural gas, solid fossil fuels is the main source in the national energy production of countries such as Poland (77%), Estonia (62%), the Czech Republic (52%) and Greece (49%). Oil has the biggest share in the energy production mix in Denmark.[21] In the case of Romania, the energy mix is one of the most balanced in Europe, with natural gas, hydropower, coal, nuclear energy and wind energy having approximately equal shares in national energy production.[22]

[20] Eurostat (2021). *What do we produce in the EU?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2b.html?lang=en (Accessed: 5 January 2022).
[21] Ibid.
[22] CEE Bankwatch Network *The energy sector in Romania.* Available at: https://bankwatch.org/beyond-coal/the-energy-sector-in-romania (Accessed: 5 January 2022).

3.4. Energy imports into the EU

At the EU level, the total amount of energy consumption comes both from internal production (summing up the individual production of the Member States) and from energy imported from third party countries. In 2019, the EU's own production was about 39% of the total consumption, the remaining 61% being imported energy.[23] The total energy consumption (the total energy consumption of a state represents the total amount of energy that the state has at its disposal) comes from several types of primary energy resources.[24]

To sustain its own consumption, the EU needs to import energy - mainly in the form of energy products. Most of these imports are from non-EU countries. In 2019, petroleum products (of which crude oil is the most important component) accounted for ⅔ of the total energy imports, followed by natural gas (27% of imports) and solid fossil fuels (6% of total energy imports).[25] If a large proportion of imported energy comes from a small number of exporters, it can become a threat to the energy supply security.[26]

In 2019, out of the total 846973 thousand tons of petroleum products imported in the EU, a percentage of 27% (respectively 195641 thousand tons)[27] came from Russia, to which were added the imports from other states such as Iraq (9%), Nigeria (8%), Saudi Arabia (8%), Kazakhstan and Norway (both 8%).[28] The situation is similar for the import of natural gas (the total import being 440593 million cubic meters): 41% of the total amount of imported gas comes from Russia (ie 166036 million cubic meters)[29] to which is added 16% from Norway, 8% from Algeria, 5% from Qatar. Regarding the import of solid fossil fuels, out of a total imported of 137034 thousand tons, the import from Russia reaches

[23]Eurostat (2021). *Where does our energy come from?*. Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2a.html?lang=en (Accessed: 5 January 2022).
[24] Ibid.
[25] Eurostat (2021). *From where do we import energy?*. Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html?lang=en (Accessed: 5 January 2022).
[26] Ibid.
[27] Eurostat (2021). *Imports of oil and petroleum products by partner country.* Available at: https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_OIL__custom_938408/bookmark/table?lang=en&bookmarkId=85542020-ba3b-40ec-babd-e72e5cc45423 (Accessed: 5 January 2022).
[28] Eurostat (2021). *From where do we import energy?*. Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html?lang=en (Accessed: 5 January 2022).
[29] Eurostat (2021). *Imports of natural gas by partner country.* Available at: https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_GAS__custom_938385/bookmark/table?lang=en&bookmarkId=d84ea630-1f0a-4827-891d-f4a8e930dfe7 (Accessed: 5 January 2022).

56108 thousand tons[30], representing 47% (to which is added 18% from the USA and 14% from Australia)[31].

Imported energy products vary in type and percentage, depending on the needs of each Member State. Thus, if in Cyprus, Malta, Greece and Sweden, more than 80% of imports are oil products, in Hungary, Italy, Austria and Slovakia 30% of imports are natural gas.[32]

3.5. The energy dependency rate and relevant statistics

The EU imports energy from non-EU countries to supplement its own consumption. The rate of energy dependence indicates the proportion of energy that a certain economy imports, relative to the total amount of energy available for consumption. It is defined as[33]:

$$\text{the rate of energy dependency} = \frac{\text{net energy import}}{\text{gross energy available (\%)}}$$

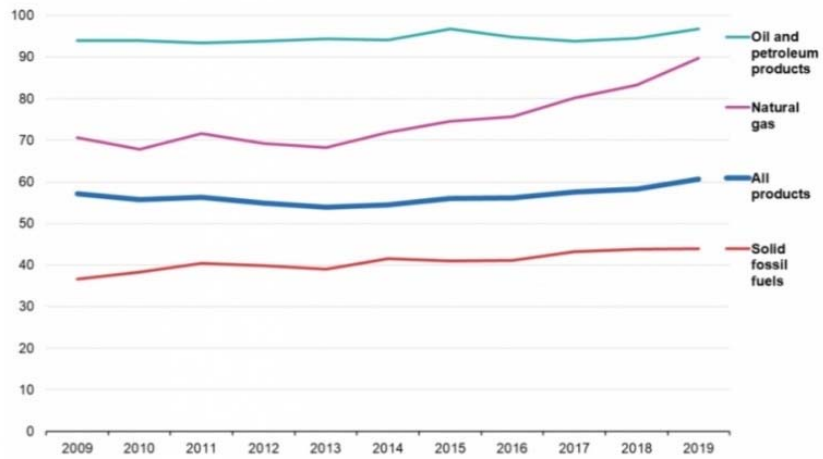
A rate smaller than 100% means that the economy in question exports more energy than it imports. If the rate is higher than 100%, this means that energy stocks have been created.

In the last decade (2009-2019), energy imports have exceeded the primary production by more than 50%, the rate of dependence of the European Union on energy imports having a relatively stagnant evolution – ranging from 57.1 to 60.7% (Graph 1).[34] In 2019, the dependence rate was at a maximum regarding oil (96.8%) and natural gas (89.7%), reaching the minimum value for solid fossil fuels (44%).[35]

---

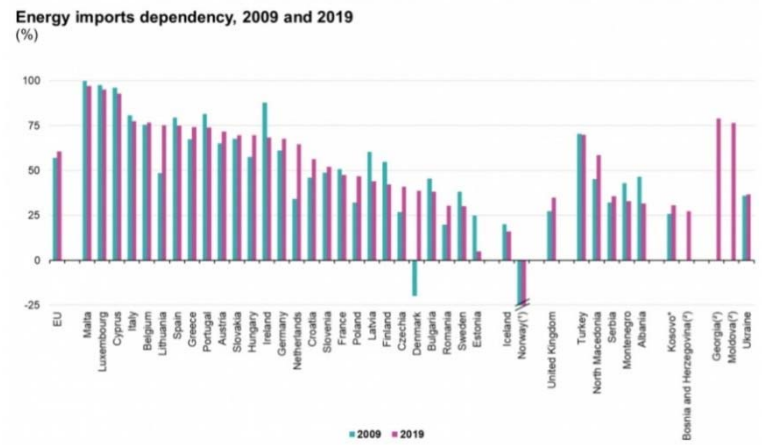
[30] Ibid.
[31] Eurostat (2021). *Imports of solid fossil fuels by partner country.* Available at: https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_SFF__custom_938375/bookmark/table?lang=en&bookmarkId=0fb30b5d-e94b-44f9-9fca-804d4f39fab5 (Accessed: 5 January 2022).
[32] Eurostat (2021). *From where do we import energy?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html?lang=en (Accessed: 5 January 2022).
[33] Eurostat (2021). *Glossary: Energy dependency rate.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Energy_dependency_rate (Accessed: 5 January 2022).
[34] Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports#The_EU_and_its_Member_States_are_all_net_importers_of_energy (Accessed: 5 January 2022).
[35] Ibid.

Graph 2: *Evolution of the energy dependency rate of the EU in the period 2009-2019*



Source: Eurostat (2021) *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports#The_EU_and_its_Member_ States_are_all_net_importers_of_energy (Accessed: 5 January 2022).

Graph 3: *Energy imports dependency (2009-2019)*



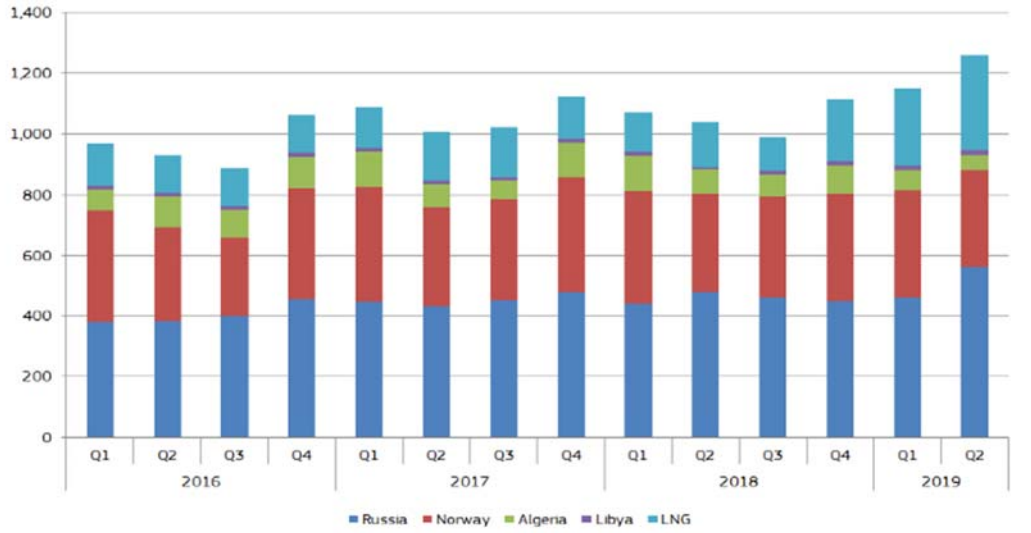
Source: Eurostat (2021) *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports#The_EU_and_its_Member_ States_are_all_net_importers_of_energy (Accessed: 5 January 2022).

Graph 3 shows the energy dependencies of each Member State in terms of imports. In some cases, energy imports exceed 90% of the total consumption of that country (Cyprus, Luxembourg and Malta), while other countries have much

lower import dependencies (Estonia, Sweden and Romania). Moreover, it can be seen that 9 other Member States far exceed the EU average of 60%, importing more than 70% of their energy from outside the EU.[36]

According to latest data published by the European Commission, about 26% of the EU's oil imports and 40% of the EU's gas imports come from Russia[37]. At the same time, the dependency that the EU has on Russian energy has been increasing over the years, particularly when it comes to gas imports. This is particularly important since energy from natural gas is used for both industrial production and heating and makes more than 20% of the EU energy mix.

Graph 4: *EU imports of natural gas by source in Twh (2016-2019)*



Source: European Commission, based on data from the ENTSO-G Transparency Platform, availble at https://ec.europa.eu/energy/sites/ener/files/documents/quarterly_report_on_european_gas_markets_q2_2019_final_v1.pdf (accessed January 6, 2022).

While data is not similarly available for each EU Member State when it comes to establishing the energy dependence on Russia, taking into consideration the degree that EU as a whole is becoming increasingly dependent on Russian gas and considering the fact that it will take a long time before the policy goals established through the Green Deal will be implemented, given the need for investments, it is

[36] Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports#The_EU_and_its_Member_States_are_all_net_importers_of_energy (Accessed: 5 January 2022).
[37] European Commission, Countries and Regions, Available at: https://ec.europa.eu/trade/policy/countries-and-regions/countries/russia/ (Accessed: 8 January 2022).

clear that Russia will play an important role in securing the EU's energy supply in the years to come.

Further analysis in what regards the specific tools and infrastructure that both EU and Russia have will be needed in order to conclude on how the bilateral relationship will ease or not the energy dependency that the EU has developed over time. This is particularly timing, considering the current geopolitical events in Ukraine – one of the main route for Russian gas into the EU as well as the future of the infrastructure projects to be developed.

4. Conclusions – The next questions

As it can be seen from the statistical data analysed, more than half of the energy needs come from imports from third countries, although the rate of energy dependence of the EU seems to have stabilized in the last decade. Of these exporting countries, Russia ranks first in primary sources, in terms of oil and natural gas.

The problem of the energy dependence of the European states on energy imports is not just an internal European problem, but a hot issue in global geopolitics. During a luncheon given by the NATO Secretary General, Donald Trump, then President of the US, said, referring to Nord Stream 2, that: "Germany is completely controlled by Russia, because 60-70% of its energy needs come from Russia. Tell me if it's appropriate. I don't think so" (Yergin, 2020, p. 107). He went on to say, "Germany is a captive of Russia" (Yergin, 2020, p. 107). Germany's reply came from Chancellor Merkel: "we are very happy that today we are united in freedom and we can make independent policies and make independent decisions" (Yergin, 2020, p. 107). From these remarks, a basic question arises: is this trade relationship an instrument of Russia's power and influence in the UE or is it a mutually beneficial relationship, the result of a balance of geopolitical forces? Considering the current crisis over Ukraine, this question becomes even more relevant. However, in order to give an legitimate answer, further research needs to look into the practical ways that Europe can escape Russian dependency and build infrastructure and relations that are diversifying away from it.

In order to increase the security of the energy supply, the EU has implemented numerous initiatives regarding the development of gas pipelines, including Nord

Stream (operational since November 2011, on the Russia – EU route via the Baltic Sea), Trans Adriatic Pipeline (operational since 15.11. 2020, on the Azerbaijani – Italy route, via Greece and Albania) and the controversial Nord Stream 2. For the latter, on the Russia – Germany route via the Baltic Sea, talks began in 2015, but were hampered by the critical positions of some EU countries, located in the geographical neighbourhood of Russia (Poland and the Baltic countries), due to the conflict in Ukraine. Mikhail Krutikhin, an analyst and co-founder of RusEnergy, a Moscow-based independent consulting firm, told DW News that "the Russian government will not supplement gas supplies and will continue to raise prices not for commercial reasons but for purely political reasons". He argued that this behaviour was in fact blackmail in order for the EU states to sign the approval of the operation of the Nord Stream 2 pipeline, the analyst considering that "Putin is basically declaring war on the EU, using Russia's gas reserves as his main weapon".[38]

In order to address the security of energy supply issues, the EU has set up the Energy Community since 2005, which seeks to integrate the countries neighbouring the EU into the European internal energy market. By establishing strong partnerships with countries along the energy chain (exporter – transit – consumer) the EU hopes to reduce the risks of energy dependence. In addition to diversifying transport routes, another measure to increase the security of energy supply is to encourage Member States to use as diverse a mix of energy sources as possible, as well as to increase the production of renewable energy. The question to ask next is whether the investment into alternative, renewable sources will help diminishing the dependence on Russian energy and if yes, what is the timeline to do so? This is the key issue to investigate in relation to everything the EU proposes and adopts within the climate change policy making framework.

[38] The Global Herald (2021). *Europe's energy crisis: What's Russia's role?* Available at: https://theglobalherald.com/news/europes-energy-crisis-whats-russias-role-dw-news/ (Accessed: 5 January 2022).

References

Agenția Europeană de Mediu (2021). *Mediul urban.* Available at: https://www.eea.europa.eu/ro/themes/urban/intro (Accessed: 5 January 2022).

CEE Bankwatch Network *The energy sector in Romania.* Available at: https://bankwatch.org/beyond-coal/the-energy-sector-in-romania (Accessed: 5 January 2022).

European Parliament (2021). *Politica energetică: principii generale.* Available at: https://www.europarl.europa.eu/factsheets/ro/sheet/68/politica-energetica-principii-generale (Accessed: 5 January 2022).

European Union (2009). *Politica regională a Uniunii Europene, o sursă de inspirație pentru țările din afara UE?.* Available at: https://ec.europa.eu/regional_policy/sources/international/pdf/external_mo.pdf (Accessed: 5 January 2022).

Eurostat (2021). *Energy production and imports.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports (Accessed: 5 January 2022).

Eurostat (2021). *Energy statistics – an overview.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Primary_energy_production (Accessed: 5 January 2022).

Eurostat (2021). *From where do we import energy?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html?lang=en (Accessed: 5 January 2022).

Eurostat (2021). *Glossary: Energy dependency rate.* Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Energy_ dependency_rate (Accessed: 5 January 2022).

Eurostat (2021). *Imports of natural gas by partner country.* Available at: https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_GAS__custom_938385/bookmark/table?lang=en&bookmarkId=d84ea630-1f0a-4827-891d-f4a8e930dfe7 (Accessed: 5 January 2022).

Eurostat (2021). *Imports of oil and petroleum products by partner country.* Available at: https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_OIL__custom_938408/bookmark/table?lang=en&bookmarkId=85542020-ba3b-40ec-babd-e72e5cc45423 (Accessed: 5 January 2022).

Eurostat (2021). *Imports of solid fossil fuels by partner country.* Available at: https://ec.europa.eu/eurostat/databrowser/view/NRG_TI_SFF__custom_938375/bookmark/table?lang=en&bookmarkId=0fb30b5d-e94b-44f9-9fca-804d4f39fab5 (Accessed: 5 January 2022).

Eurostat (2021). *What do we produce in the EU?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2b.html?lang=en (Accessed: 5 January 2022).

Eurostat (2021). *What kind of energy do we consume in the EU?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-3a.html?lang=en (Accessed: 5 January 2022).

Eurostat (2021). *Where does our energy come from?.* Available at: https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2a.html?lang=en (Accessed: 5 January 2022).

Neamțu, L., Neamțu, A. *Piața europeană și caracteristicile sale*. Available at: https://core.ac.uk/download/pdf/6233894.pdf (Accessed: 5 January 2022).

Paris Agreement, 2015.

Radio France Internationale Romania (2020) *Ce produce Uniunea Europeană. Industria are cea mai mare pondere în PIB, agricultura, cea mai mică.* Available at: https://www.rfi.ro/economie-126703-produce-uniunea-europeana-industria-pondere-pib-agricultura (Accessed: 5 January 2022).

Stone, O. (2017). *The Putin Interviews: Oliver Stone Interviews Vladimir Putin*.

Stratos.ro *Tipuri de energie și cum afectează mediul înconjurător*. Available at: https://stratos.ro/tipuri-de-energie-si-cum-afecteaza-mediul-inconjurator/ (Accessed: 5 January 2022).

Treaty on the Functioning of the European Union.

Yergin, D. (2020). *The New Map*, 2020.