

The War in Ukraine and the Overhaul of EU Energy Security

PETRE PRISECARU

European Studies Center, Institute for World Economy

Romanian Academy

ROMANIA

petreprisebaru@gmail.com

Abstract: In the last years EU energy policy was strongly affected by a mix of challenges starting with the Paris Agreement and the European Green Deal ambitious targets, followed by the outburst of COVID-19 pandemic and lastly by the war in Ukraine. An European Energy Security Strategy was adopted in 2014 based on eight key pillars, followed by Energy Union strategy, adopted in February 2015, built on five closely related and mutually reinforcing dimensions, the first one being energy security, solidarity and trust. Over the past years Energy Union was the subject of six regular progress reports, the last two ones in October 2020 and October 2021, where more attention was paid to energy safety and to the fourth dimension-decarbonising the economy. Due to the energy market liberalization, to energy transition and also to the impact of COVID-19 pandemic an energy crisis burst in EU in 2021, affecting mainly the natural gas and electricity prices and markets. Russia's invasion in Ukraine led to skyrocketed prices of oil and natural gas while revealing the high dependence of EU on fossil fuels imports from Russia. Our paper aims to investigate if the rounds of sanctions can reduce this dependency while finding new sources of supply - a task that is very difficult since the global supply of LNG, coal and oil is quite limited or insufficient. Our research also highlight that there is an urgent need for a new strategic vision at EU and national level to ensure energy security and protect the environment.

Key Words: energy security, solidarity, fossil fuels dependence, transition, renewables, energy strategy

JEL Classification: F15, Q 28, Q 35, Q 42, Q 48, Q 54

1. Introduction

Although it has long been a major and important concern of EU energy policy, as evidenced by the strategy launched in 2014 and other important initiatives such as the Energy Union, energy security has been a rather neglected topic in recent years in favour of green policies and combating greenhouse effects. With the recent war in Ukraine, the EU's major vulnerability in the field of energy security stood out due to its heavy dependence on imports of hydrocarbons from a single source, Russia, a supplier that has been subject to major sanctions affecting its energy supplies to many Member States, forcing them to quickly look for alternative import sources while resorting again to polluting fossil fuels, as coal. In this complicated and difficult context, the implementation of the European Green Deal and the achievement of its ambitious environmental goals remain difficult to attain, and energy security should become the number one priority for EU energy policy.

2. European Energy Security Strategy

European Energy Security Strategy was adopted in 2014 as a Communication from the Commission to the European Parliament and the Council (COM/2014/0330 final) under the influence of the 2006 and 2009 gas supply crises triggered by Russia-Ukraine disputes over transit of natural gas to Central and Western Europe.

The European Energy Security Strategy was thought as an integral part of the 2030 policy framework on climate and energy, in order to be fully consistent with EU competitiveness and industrial policy objectives. It was also important that decisions to be taken on that framework as soon as possible, as indicated by the European Council, and that Member States to gear up collectively to elaborate and implement long-term plans for competitive, secure and sustainable energy. Tackling energy security in a fast-changing environment would require flexibility, capacity to adapt and change and the strategy would need to evolve due to changing circumstances.

The Strategy set out areas where decisions need to be taken or concrete actions implemented in the short, medium and longer term to respond to energy security concerns. It was based on eight key pillars that together promote closer cooperation beneficial for all Member States while respecting national energy choices, and were underpinned by the principle of solidarity (European Commission, a, 2014).

1. Immediate actions aimed at increasing the EU's capacity to overcome a major disruption during the winter 2014/2015. As enough EU Member States were very dependent on one single gas supplier, Russia, the Commission intended to work together with Member States, regulators, Transmission Systems Operators and operators to improve the Union's immediate preparedness in respect of possible disruptions. Particular attention was going to be paid to vulnerable areas, to enhancing storage capacity, to developing reverse flows, to developing security of supply plans at regional level and to exploiting more the potential of LNG. As key actions undertaken by the Commission and Member States one could mention: intensifying cooperation within the Gas Coordination Group and notably continue monitoring natural gas flows and the level of gas storage and coordinating at EU and/or regional level national risk assessments and contingency plans; updating the risk assessments and the Preventive Action Plans and Emergency Plans, as provided for by the Regulation 994/2010; launching energy security stress tests in light of the supply disruption risks in the next winter, and developing back-up mechanisms if necessary, such as increasing gas stocks, developing emergency infrastructures and reverse flows and reducing energy demand or switching to alternative fuels in the very short term; developing further cooperation with gas suppliers and transmission system operators to identify possible sources for short-term additional supplies, notably LNG.

2. Strengthening emergency/solidarity mechanisms including coordination of risk assessments and contingency plans; and protecting strategic infrastructure. One important priority was defined as ensuring the best possible preparation and planning for improving resilience to sudden disruptions in energy supplies, protecting strategic infrastructures and supporting collectively the most vulnerable Member States. **Oil stocks** representing about 120 days of consumption and their value along with with the oil stockholding obligation developed under the International Energy Agency (IEA) were considered important instruments for preventing any physical shortage of supply and for tempering market price fluctuations in the case of a crisis. EU had to promote further international cooperation and transparency concerning oil stocks and oil markets. **Preventing and mitigating gas supply disruption risks** by strengthening EU coordination capabilities, imposing EU rules for protecting customers in severe conditions, drawing up by MS of Emergency Preparedness Plans and Emergency Response Plans, fully implying Gas Coordination Group, involving Member States, regulators and all stakeholders, as an effective EU-wide platform to exchange information between experts and coordinate action, developing risk assessments (stress tests) and security of supply plans at regional and EU levels, were viewed as key elements for developing a regulatory framework for gas storages that recognises their strategic importance for supply security.

Protection of critical infrastructure against threats, hazards, IT attacks, control exerted by non-EU entities, acquisitions made by non-EU companies, and a stricter application of EU internal market rules, notably as regards public procurement is also considered a key input for EU energy security. **Solidarity mechanisms among Member States** by using proper contingency planning, based on stress tests of the energy systems and discussions with national authorities and industry, guaranteeing minimum levels of intra-EU deliveries of alternative fuel supplies to complement emergency stocks, reviewing existing mechanisms to safeguard security of energy supply, were essential tools for proposing to Member States and industry new contingency coordination mechanisms and plans to deliver energy to countries in times of need, based on risk assessments (energy security stress tests).

3. Moderating energy demand. At that time it was important to attain EU energy efficiency target of 20% in 2020 resulting in 371 Mtoe primary energy savings compared to projections with the support of the Energy Efficiency Directive ("EED") and the Energy Performance of Buildings Directive ("EPBD"). So the focus was put on achieving significant energy savings, especially in the building sector, responsible for about 40% of energy consumption in the EU and a third of natural gas use, that could be cut by up to three quarters if the renovation of buildings was going to accelerate and improvements were made in district heating and cooling. In the field of industry which consumed around one quarter of gas used in the EU there was a significant potential for energy efficiency gains driven by Emissions Trading System proposed by the Commission as part of the 2030 climate and energy framework. Investments from the private sector had a key role to play but also European Structural and Innovation Funds, from which €27 billion had been allocated specifically for low carbon economy investments, including energy efficiency, but the amount of these investments would have increased to over €36

billion. Other key actions aimed at energy efficiency were planned to be carried out by the Member States and the European Commission.

4. Building a well-functioning and fully integrated internal market. A European internal market for energy was defined as a key factor for both energy security and government interventions affecting this market framework, such as national decisions related to renewable energy or efficiency targets, while being essential for supporting investment in nuclear generation and other key infrastructure projects that had to be discussed at European and/or regional level to ensure that decisions in one Member State did not undermine security of supply in another Member State. Various tools existed at EU level for implementing such projects in respect of the acquis and in a coordinated manner (internal market legislation, TEN-E Guidelines, State-Aid control) and enforcement tools had to be preceded by a strategic discussion at EU level, not just at national level. **The first measure was to make the internal market for electricity and gas work better** through liberalization packages, more regional market integration, more free competition, well-developed trading mechanisms and liquid spot markets along with the full coupling of some regional electricity and gas markets. **The second measure was to accelerate the construction of key interconnectors**, meaning a significant development of energy transport infrastructure, in particular cross-border interconnections between Member States, which would involve €200 billion up to 2020 in this respect. The Regulation on the Guidelines for trans-European energy networks together with the Connecting Europe Facility (CEF) were designed to identify and ensure the timely implementation of the key projects Europe needs along 12 priority corridors and areas. **The third measure targeted European oil market** which was heavily dependent on crude oil and diesel oil imports from Russia. In this respect EU intended to closely monitor issues requiring a more strategic coordination of the EU's oil policy: the dependence of the EU's refinery industry on Russian crude oil, the increased concentration in the Russian oil industry, and the increased ownership of EU refinery capacity by Russian oil companies, the refined products consumed in transport. It was deemed to be important maintaining competitive refining capacities in Europe to avoid overdependence on imported refined petroleum products and being able to process crude oil stocks with sufficient flexibility. Other key actions aimed at building an integrated internal market were planned to be carried out by the Member States and the European Commission.

5. Increasing energy production in the European Union aimed at reducing its dependency on particular suppliers and fuels, while also maximising its use of indigenous sources of energy. Due to the fact that indigenous energy production in the European Union had steadily declined for about 20 years it was necessary to increase the use of renewable energy, nuclear energy, as well as sustainable production of competitive fossil fuels. For renewable energy it was set the objective of 20% share in the final energy consumption for 2020. Resources like hydrocarbons and clean coal were also taken into account by exploitation of conventional oil and gas deposits in Europe, both in traditional production areas like the North Sea and in newly discovered areas like Eastern Mediterranean and Black Sea. Coal and lignite having a significant share in electricity generation in several Member States would have a long-term future in the EU if using Carbon Capture and Storage (CCS). Other key actions aimed at increasing internal energy production were planned to be carried out by the Member States and the European Commission.

6. Further developing energy technologies. The reduction of EU energy dependence required substantial changes to the energy system and also the development of new energy technologies for cutting primary energy demand, diversifying and consolidating supply options (both external and indigenous), while optimising energy network infrastructure to fully benefit from this diversification. New technologies were meant to improve the efficiency of buildings and local heating systems, to provide new energy storage solutions and optimise the management of grids. But significant investments from the EU and Member States in energy research and innovation were required based on the priorities set in the Horizon 2020 and also on the Integrated Roadmap of the Strategic Energy Technology Plan.

7. Diversifying external supplies and related infrastructure for Natural Gas

In 2013, 39% of EU gas imports by volume came from Russia, 33% from Norway and 22% from North Africa (Algeria and Libya), other sources counting for just 4%. Also at that time LNG imports from some countries like Qatar, Nigeria increased and peaked at about 20%. More diversified natural gas resources was considered a priority mainly based on new LNG supplies from Northern America, Australia, Qatar and new discoveries in East-Africa. Gas resources from the Caspian region and Central Asia (from Turkmenistan, Iraq and Iran) could also significantly contribute to the enlargement of the Southern Gas Corridor. **Uranium and nuclear fuel** were very important for nuclear power plants producing electricity at a low cost. The worldwide uranium supply market was stable and well-diversified but the EU was completely dependent on external supplies. At that time Russia was a key competitor in nuclear fuel production and was making investments in the

whole nuclear chain in Europe. But at EU level it was taken into account the possibility of fuel supply diversification as a condition for any new investment, to be ensured by the Euratom Supply Agency. Some key actions aimed at diversifying external energy supplies were established to be carried out by the Member States and the European Commission.

8. Improving coordination of national energy policies and speaking with one voice in external energy policy. Member States had to coordinate better important energy policy decisions, while decisions on energy mix being a national prerogative, the progressive integration of energy infrastructure and markets, the common reliance on external suppliers, the need to ensure solidarity in times of crisis, were considered fundamental political decisions on energy and they needed to be discussed with neighbouring countries. The external dimension of EU energy policy was also a matter of common decisions of Member States. The European Commission supported several important objectives such as: the idea of an Energy Union, the international energy markets which are stable, transparent, liquid, rule based, the coordinated promotion of sustainable energy technologies across the globe, but particularly among emerging economies, engaging all neighbouring partners at all levels in order to enable their close integration into the EU energy market, also by means of Energy Community, the role played by summits with strategic partners, energy dialogues with major supplier countries, agreements with third countries in the field of energy, fully compliant with EU legislation.

The European External Action Service had an important role to play in integrating energy considerations into EU foreign policy and coordinating with Member State's foreign affairs ministries. Other key actions aimed at improving coordination of national energy policies and speaking with one voice in external energy policy were planned to be carried out by the Member States and the European Commission.

3. Energy Union and energy security

The energy union strategy (COM/2015/080), published on 25 February 2015, aims at building an energy union that gives EU consumers - households and businesses - secure, sustainable, competitive and affordable energy. Energy union is also one of the pillars or components of EU Economic Union, besides Banking Union, Capital Market Union, and Fiscal Union. Since its launch in 2015, the European Commission has published several packages of measures and regular progress reports (6), which monitor the implementation of this key priority, to ensure that the energy union strategy is achieved.

The energy union builds five closely related and mutually reinforcing dimensions: **Security, solidarity and trust** - diversifying Europe's sources of energy and ensuring energy security through solidarity and cooperation between EU countries, **A fully integrated internal energy market** - enabling the free flow of energy through the EU through adequate infrastructure and without technical or regulatory barriers, **Energy efficiency** - improved energy efficiency will reduce dependence on energy imports, lower emissions, and drive jobs and growth, **Climate action, decarbonising the economy** - the EU is committed to a quick ratification of the Paris Agreement and to retaining its leadership in the area of renewable energy, **Research, innovation and competitiveness** - supporting breakthroughs in low-carbon and clean energy technologies by prioritising research and innovation to drive the energy transition and improve competitiveness (European Commission b, 2015)

The last two reports evaluating the progress of Energy Union were launched in October 2020 and October 2021 and in the following sections of our paper we will show their conclusions on EU energy security.

3.1. Fifth report on the state of the energy union-energy security

The COVID-19 crisis has exerted a considerable stress on energy demand affecting its volume and also consumption patterns, but Member States' preparedness had proved robust and ensured continuity of essential operations. The Energy Union legislative framework on energy security – in particular, the Regulation on Risk Preparedness in the electricity sector and the Regulation on Gas Security of Supply – had an important contribution in managing the impacts of the crisis in the energy sector. In June 2020 the Commission published good practices and lessons learned for the energy sector. The expert groups created by EU legislation played a key role in facilitating cross-border coordination alongside with the extensive cooperation and information sharing between the Member States, system operators and relevant agents in the energy sector. The Commission was assessing potential vulnerabilities and options for improving the resilience of critical supply chains for energy technologies. Strengthening the resilience and cybersecurity of critical energy infrastructure had been highlighted by the pandemic and the European Commission had started to work on a network code to ensure the cybersecurity of cross-border electricity flows.

The Risk Preparedness Regulation in the electricity sector ensured bilateral cooperation between Member States in order to prevent, prepare for and mitigate electricity crises. Two new methodologies have allowed the European Network of Transmission System Operators for Electricity (ENTSO-E) to identify the most relevant regional electricity crisis scenarios and carry out the first seasonal adequacy assessment for the summer 2020 based on a new methodological approach (the Summer Outlook 2020) and this was intended to serve as a basis for preparing national scenarios and Member States' risks preparedness plans. The Commission adopted a recommendation on fair compensation for Member States when they provide each other with assistance to prevent and manage crises (European Commission c, 2020).

Figure no. 1: Energy Union is based on 5 dimensions



Source: Author's own contribution based on EC Communication.

Infrastructure is the key for a market to function properly and efficiently and the EU had set electricity interconnection capacity targets but eight Member States had not met the 10% interconnection target for 2020. Interconnection projects were meant to support Member States' decarbonisation efforts and lay the foundation for hydrogen lead markets in Europe, based also on financial contribution from the Connecting Europe Facility and actions in the framework of the Recovery and Resilience Facility aiming at integrating clean technologies and renewables through modernised networks and enhanced interconnectivity. Efforts were made to ensure full use of existing interconnectors and operational digital platforms. Implementing the provisions related to internal electricity market design and, in particular, the rollout of market coupling had seen a large increase in the efficiency of electricity trading in Europe

On the security of gas supply, Member States have prepared preventive action and emergency plans, containing measures for mitigating the impact of a gas supply disruption and risks identified at national and regional level. The Commission continued to help Member States implement the solidarity principle for ensuring uninterrupted gas supplies to the most vulnerable consumers even in severe gas crisis situations. The Commission had assessed experiences with current legislation on the safety of offshore oil and gas operations and intended to submit its report to the European Parliament and Council during autumn 2020. On nuclear safety and security, the EU has a comprehensive framework that covers the full nuclear life cycle, including the safe and responsible management of spent fuel and radioactive and European Commission continued to carefully monitor the implementation of this framework in Member States. The EU had also continued to promote high levels of nuclear safety outside the EU, particularly in neighbouring countries that operated or planned to build nuclear power plants by supporting them in conducting stress tests and following up to promote proper and transparent implementation of recommendations.

3.2. Sixth report on the state of the energy union- enhancing energy security and safety

A continued high reliance on imports of fossil fuels exposed the Union's economy to global price fluctuations hence improving its resilience required enhancing energy security and safety while phasing out fossil

fuels and integrating more decentralised renewable energy. The EC Communication “Tackling rising energy prices: a toolbox for action and support” provided mid- and long-term measures to ensure this. In 2021, two large-scale technical incidents were resolved within one hour, proving the resilience of the EU’s energy system despite the persistence of COVID-19 pandemic and this demonstrated that the effective preparedness for possible shocks was an ongoing need at Member State and EU level. The increased net energy import dependency, which reached 60.6 % in 2019, the highest level for the last 30 years was explained by the combination of a slight increase in energy demand and reduced domestic production of fossil fuels and the relatively reduced level of domestic renewable capacities.

The sectorial European coordination groups (for electricity, gas and oil) played an important role in 2020 and 2021, in monitoring security of supply, and especially the impact of delays in the maintenance of power plants due to COVID-19 related measures and discussing possible reactions to extreme weather events. In the electricity sector, the implementation of the risk preparedness regulation was in the run-up to the first set of national risk-preparedness plans containing Member States’ measures to prevent, prepare for, and mitigate potential electricity crises in mutual cooperation, taking account of increasing electrification. In the context of the latest security of supply rules for gas, all but two Member States had put in place national plans to prevent or mitigate the impact of gas supply disruptions. Member States made progress in concluding bilateral solidarity arrangements aimed at securing cross-border supply to vulnerable customers in the event of severe crisis. The Commission planned a revision of the gas security of supply regulation in December 2021, for facilitating access to storage capacity across borders, including for renewable and low carbon gases. Gas storage levels and the proper functioning of the gas market were monitored ahead of the winter season. Continued improvements in electricity and gas interconnectivity had also enhanced regional cooperation and reinforced the security of supply at EU, Member States and regional level (European Commission d, 2021).

The EU was prepared for potential temporary disruptions in oil supply. In order to ensure the safe operations of the existing EU offshore oil and gas installations, the Commission and the Member States have cooperated closely to update external emergency plans. Cybersecurity threats and vulnerabilities may affect the energy system and European Commission had started work on a network code to ensure the cybersecurity of cross border electricity flows and planned to adopt the code by end of 2022. In December 2020 the European Commission proposed two new directives related to EU Security Union Strategy to improve the resilience of the energy sector focused on the resilience of critical entities and on the security of network and information systems. Thematic Network on Critical Energy Infrastructure Protection is a forum re-launched by EC for regular discussions among operators and owners of critical energy infrastructures. EC updated the Industrial Strategy in May 2021, in order to accelerate the green and digital transitions and also for strengthening the EU’s resilience and strategic capacities. Industrial alliances were seen as an instrument for facilitating stronger cooperation and joint action between all interested partners in sectors of strategic importance. EC published a study in October 2021 for identifying potential bottlenecks in the raw materials supply chains for energy technologies that are critical for energy security and the clean energy transition.

In the nuclear sector, EC was working closely with Member States’ nuclear safety regulators to monitor potential impacts of the pandemic on the safety of nuclear installations and found no adverse impacts on their safety or reliability. EC was funding a study to review how the sector managed the pandemic, and ensured its resilience under such severe conditions. There were potential risks relating to extreme natural hazards, like those from flooding or severe weather, but EU nuclear power plants proved to be very robust against external events, as was revealed by the post-Fukushima stress tests conducted in cooperation with the Commission. The Nuclear Safety Directive required licence holders to conduct periodic safety reviews with a view to identifying further safety improvements, taking account of operating experience.

4. European countries need to overhaul their energy security strategies

After the adoption of Energy Security Strategy and the creation of Energy Union, the EU had increased its ambition to become the world’s first net-zero emission region and built up massive amounts of renewable energy, undertook huge investments in green hydrogen, and had been adopting a new energy policy to discourage the consumption of fossil fuels and finally in December 2019 launched the European Green Deal (Irina Slav, 2022). While the focus in EU energy policy has shifted from ensuring security of supply, the first dimension of Energy Union, to climate action and decarbonising the economy, the fourth dimension of Energy Union, two powerful shocks hit the global economy since 2020, the first that of the COVID-19 pandemic, the second was the war in Ukraine.

The process of energy market liberalization and transition within EU, based on five legislative packages, the fifth in 2019 (Clean Energy Package), overlapped with two major issues: energy security and climate change, both involving public interventionist policies. The collapse of hydrocarbon demand and prices in spring 2020 was followed by a relatively quick recovery of global economy in the second half of 2020 and in 2021, which produced a supply shock and an energy crisis in Europe, where the prices of natural gas and electricity exploded. But not only the gap between demand and supply led to this phenomenon but also the speculative nature of liberalized markets, due to their excessive financing, and the green energy transition from pollution sources based on fossil fuels to renewable sources (Mocearov, 2021).

After Paris Agreement had been concluded with the objective of reducing the rise in global average temperatures by 1.5 or 2 degrees Celsius from pre-industrial levels, a frantic race started in well developed economies for installing more wind turbines, more solar panels, and more storage capacities, and produce more electric cars, all requiring huge funds and investments. China became the most important producer and exporter of wind turbines and solar panels, but in the developed countries domestic production hardly depends on supply chains, on metals and products supplied by emerging economies.

In 2016 a new alliance OPEC+ was formed to include two of the three largest oil producers—Russia and Saudi Arabia, and also some Central Asian oil producers, like Kazakhstan and Azerbaijan. This expanded cartel became extremely important in the last two years and just before the pandemic really blew up the Russians and the Saudis engaged in a brief price war, but after that the alliance proved very effective in limiting its supply and fuelling a steady price increase. But no energy transition is possible without the raw materials/fossil fuels, like hydrocarbons and coal, supplied by OPEC+ and other countries. While U.S. shale drillers and Canadian producers cannot boost oil and natural gas production very fast, EU domestic hydrocarbon production was on a downward trend, and EU has been trying in vain to cut its consumption of fossil fuels because renewable energy depends a lot on the weather conditions, having an intermittent character. In the first part of 2021 the wind energy production has been quite low in Europe, the electricity consumption was on the rise and the EU was facing a growing electricity cost burden due to the high price of natural gas. In the EU there are three markets that influence each other in terms of prices: the electricity market, the gas market, the carbon market.

The EU has not yet emerged from the energy crisis when the war in Ukraine broke out and when EU energy prices have skyrocketed and remained at very high levels in March, April and May 2022. European politicians have been active in punishing Russia for Ukraine with, so far, six rounds of sanctions that have hurt the EU more than they have hurt Russia and led to very high prices for oil and natural gas, industries in EU are warning they might have to close if the EU would ban Russian gas or if Russia decides to turn the tap off in retaliation, and people are going to protest. It was not Russia but Ukraine who stopped the flows from one entry point in Eastern Ukraine on May 11, 2022 and Gazprom said it was technically impossible to reroute gas flows to Europe via Ukraine. Brussels officials proposed oil and gas sanctions, and voted for a ban on Russian coal imports to take effect in August. Russia supplies 45% of Europe’s thermal coal, used for electricity and heat generation. The EU is now trying hard to find a replacement, while the world’s biggest coal exporter Indonesia is hiking its prices massively and Australia, another coal giant, is warning it will not have enough for Europe. On the other hand EU plan to ditch Russian gas may cost \$ 214 billion more than planned. Replacing Russian oil, gas and coal will not be an easy task for EU Member States, although EU and International Energy Agency tried to find together some measures to cut the dependence of Member States on Russian hydrocarbon imports. It was the 10-point IEA plan, launched on March 3, 2022, that covers the gas supply, electricity system and end-use sectors, and could lead to a reduction in imports from Russia by 50 billion cubic meters per year (1/3). On March 18, 2022 IEA launched a 10-point plan to reduce oil use with the support of 10 actions that can be taken to cut oil demand by 2.7 million barrels a day within four months. In the table no.1 one can see the EU energy mix and the share of imports from Russia in 2020.

Table no.1: EU energy mix and the share of imports from Russia in total imports in 2020 (%)

Resource	Energy mix	Imports from Russia
Total petroleum products	34.5	25.7
Natural gas	23.7	41.1
Renewable energy	17.4	-
Nuclear energy	12.7	-
Solid fossil fuels	11.5	52.7 (hard coal)

Other	0.2	-
Total	100.0	-

Source: Eurostat, 2020 (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_energy_mix_and_import_dependency&stable=1#EU_energy_dependency_on_Russia).

For a very long time EU energy policy has been confronted with the dilemma of focusing on energy independence or on energy security, which also implies a certain degree of independence, but in no case an excessive dependence on imports of resources. In the case of EU the environmentalists crushed not only any ambitions related to energy independence by promoting bans on nuclear energy and natural gas development but also imposed an energy transition based on interventionist policies, meant to develop renewable resources, like solar and wind, which are necessary but volatile and intermittent and need backup from nuclear, hydro, and natural gas for the security of the energy supply. Renewable energy storage is also virtually impossible, as one cannot build an industrial-size network of enormous batteries, the cost would be prohibitive and there would be a high demand for large imports of materials, such as lithium A battery energy storage system of Europe's size would cost more than \$2.5 trillion, according to a MIT Technology Review paper (James Temple, 2018).

In 2021 economic recovery induced a high inflation due to the large gap between demand and supply for many products. The energy crisis was caused by insufficient gas supply, the soaring cost of CO2 permits and the boom of whole electricity prices. EU is in a co-dependency position with Russia in the field hydrocarbons. For replacing Russian natural gas (150 billion cubic meters) the alternatives are much more expensive and a bit difficult to achieve, as liquefied natural gas from Norway, USA, Algeria, Qatar, Israel needs building more terminals and much more LNG vessels. For their economic survival European countries should have diverse and cheap sources of energy supply, like nuclear energy, indigenous gas reserves, other competitive resources, otherwise European industry and consumers may collapse due to the rising cost of energy. If we want cheap and abundant energy in Europe, one cannot blame too much nuclear, coal, gas, and oil for polluting effects and one cannot promote interventionist policies which entail a higher cost for all consumers. Fossil fuels cannot be fully substituted with renewables that are intermittent, volatile, and unpredictable. Installing renewables involves a huge cost to networks, it is estimated that fixed cost of networks will increase by the \$150 billion. Germany invested massively in renewables (doubling bills for consumers), spending more than \$200 billion on subsidies, but now by reactivating coal power plants it depends more on lignite and Russian gas to guarantee supply (ZeroHedge a, 2022).

In May the EU announced its intention to ease environmental regulations in order to replace Russian fossil fuels with renewable energy and imported hydrogen. The draft obtained by Financial Times calls for the acceleration of wind and solar projects without the need for an environmental impact assessment across the EU's 27 member states, as lengthy and complex administrative procedures are a key barrier for investments in renewables and their related infrastructure (ZeroHedge, b, 2022). The war in Ukraine has sped up the EU's transition to renewable energy with the objective to cut emissions by at least half by 2030 and have zero carbon emissions by 2050. On May 10th, Frans Timmermans, vice-president of the European Commission and responsible for the European Green Deal, indicated that imported or domestic produced hydrogen could be a substitute for Russian natural gas used by Europe's industrial countries: *"It's essential not just to reduce our carbon footprint, it's essential to keep our economy competitive. We need a new energy source for difficult to abate sectors. And hydrogen is that energy source"*. In his opinion the EU could produce 40% of electricity from renewable sources by 2030. The EC's draft was going to be released after a week and calls for a 30% increase in the rate of renewable project construction as due to the unprecedented geopolitical situation created by Russia's invasion of Ukraine and the skyrocketed energy prices, there is a need for coordinated and urgent action to accelerate the deployment of renewable energy. In another draft EC established strict guidelines for green hydrogen via electrolysis because its production usually includes the use of fossil fuel while green hydrogen has to use electricity from renewable resources. But replacing Russian fossil fuels and concentrating on wind and solar projects does not seem sustainable at all due to uncertain weather conditions, lack of wind and sun for some time, and also due to massive funds and long periods for building wind and solar farms, for which many turbines and panels must be purchased from import (ZeroHedge,b, 2022).

Russia's invasion of Ukraine raised the issue of EU high dependence on Russian gas and oil. Is Russia a reliable energy supplier or not? It can be a matter of debate, but due to this war it is a great concern over natural gas and oil supply to Europe which prompted the EU and the biggest economies in Europe dependent on Russian hydrocarbons to urgently overhaul their energy security strategies (Paraskova, 2022). Moving away from Russian gas could come at a very high price. Can EU survive next winter without Russian gas? Although European Commission believes that it is quite possible, this will be a major challenge for the EU and many European

economies, especially Germany, which imports half the gas it needs from Russia. Southeast European countries, some Central European countries and Russia's neighbours like Estonia and Finland, are 100% dependent on Moscow for their natural gas supply. The war in Ukraine has already cut off Russian gas supply not due to sanctions applied by the EU but due to military operations. For EU Member States ensuring energy security would mean giving up to Russian deliveries in the quickest way possible, even at a high economic price.

Some important leaders like German Chancellor Olaf Scholz and French President Emmanuel Macron have become tougher in relations with Russia, more favourable to sanctions and to a drastic reduction in their dependence on Russian imports. Italy has already found alternative routes for gas from other suppliers such as Algeria and the Trans Adriatic Pipeline (TAP) from Azerbaijan. Other EU members are entirely dependent on Russian gas, and for those countries reducing that dependence would need a lot of EU and supra-government coordination and solidarity for decreasing their dependence on Russian hydrocarbons. In May European Commission has rewritten oil ban to give Hungary, Slovakia and Czech Republic more time. Hungary and Slovakia would get until the end of 2024 — an extra year on top of the original timetable — to comply with the ban. The Czech Republic, which also expressed concerns about the timescale proposed by Ursula von der Leyen earlier this week, will have until the end of June 2024 (Politico, 2022).

If the total annihilation of energy dependence on Russia is to be desired this year and next year, then it must be borne in mind that the EU should not become very dependent on China, from where gets the silicon, aluminium, rare-earths, copper, lithium, etc. necessary for the massive investments in renewables and from where it imports many wind turbines and solar panels. It is not possible to demonize nuclear energy and fossil fuels. It is not normal to have an effective energy transition without understanding the importance of energy security, especially security of supply, and economic competitiveness. All resources- wind, solar, hydro, oil, natural gas and nuclear- are important for avoiding any energy crisis and not to severely erode economic competitiveness and social welfare. It is a nonsense to maintain the hidden tax scheme for CO₂ emissions during an energy crisis and to apply border taxes on oil products and natural gas, which are not taxing producers but are taxing consumers in European countries. Any energy transition must be competitive, cheap, resilient, based on all resources and all technologies, bringing more competition and efficiency and less ideology (ZeroHedge a, 2022).

5. Conclusions

Nowadays there are some dilemmas that are very difficult to solve: to choose between energy security and energy independence, to choose between fast developing renewable resources or preserving fossil fuels for a long time, to establish the number one priority in energy policy: if energy security is predominant or decarbonising the economy, to use integrated plans or sectorial strategies in approaching energy policy, to adopt a moderate fiscal system or one based on very high levels with environmental budgetary and social implications.

What environmentalists have done in Europe during the last years, and mainly after Paris Agreement and the European Green Deal adoption, led to soaring energy costs and more dependence on hydrocarbon imports, especially from Russia, and the emergence of an energy crisis, with a strong impact on natural gas and electricity in 2022. Energy market and price liberalization did not support the increase of domestic fossil fuels supply while interventionist policies were meant to speed up energy transition and the fast development of renewable resources, which are necessary but volatile and intermittent and need backup from classical resources. In our opinion it was a great mistake to promote bans on nuclear energy and natural gas development, thus contributing to a short supply of energy resources. With a share of only 7 or 9% in the global CO₂ emissions, the European Union has set out to save the planet from global warming without the participation of other major players, such as those from Asia (China and India), as evidenced by the results from COP 26, held in Glasgow.

Facing the shock of COVID-19 pandemic and the impact of energy crisis, EU is now confronted with the harsh consequences of Russia's invasion in Ukraine, which not only led to skyrocketed prices of oil and natural gas but also revealed the high dependence on Russian exports of fossil fuels. The six rounds of sanctions adopted by EU have hurt the EU as well as Russia and led to very high prices for oil and natural gas and may cause a lot of troubles to industry and population. A very limited global supply of LNG, oil and coal led to very high international prices and on short and medium term it is considerably more difficult to find viable and efficient supply alternatives for the EU. Frans Timmermans, Vice-president of the European Commission and responsible for the European Green Deal, thinks that imported or domestic produced hydrogen could be a substitute for Russian natural gas and accelerating the development of renewable resources may reduce the dependence on imports. But we believe this will be a long term process because the quick replacement of fossil fuels imported

from Russia and development of wind and solar projects does not seem sustainable under the present circumstances.

Reducing the dependence of MS on Russian fossil fuels would need a lot of EU and supra-government coordination and solidarity for decreasing their imports and also some powerful support of foreign partners. EU must use for a while all available domestic resources, like nuclear and fossil fuels, even if the latter have a high impact on the environment. On the other hand it is important that EU should not become too dependent on China for products needed in renewable energy production, raw materials or processed products, like wind turbines and solar panels. A new energy security strategy is needed both at EU level but also at national levels where there are integrated national energy and climate plans (NECPs) covering a ten year period (2021-2030) introduced by the Regulation on the governance of the energy union and climate action (EU)2018/1999, agreed as part of the Clean Energy for All Europeans package which was adopted in 2019. A rapid end of war in Ukraine may change for better energy situation in the EU if an honourable peace will be reached sooner or later and this destructive and disturbing war will not continue for a long period.

References:

- [1.] Cernat, M. (2021). EU energy policies - who wins and who loses? Maria Cernat in dialogue with Andrei Mocearov on energy prices, Baricada, 24 October;
- [2.] European Commission, a (2014). Communication from the Commission to the European Parliament and the Council- European Energy Security Strategy /* COM/2014/0330 final */;
- [3.] European Commission, b (2015). Energy union, COM/2015/080, Brussels, February 25;
- [4.] European Commission, c (2020). Fifth state of the energy union report, October;
- [5.] European Commission, d (2021). Sixth state of the energy union report, October;
- [6.] Eurostat (2020). <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2a.html>;
- [7.] Eurostat(2020).https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_energy_mix_and_import_dependency&stable=1#EU_energy_dependency_on_Russia;
- [8.] Temple J., (2018). The \$2.5 billion reason we can't rely on batteries to clean up the grid, MIT Technology Review, July 27\$2.5 trillion reason we can't rely on batteries
- [9.] Paraskova T.(2022). Europe Is Rushing To Overhaul Its Energy Security Strategy, Oilprice.com, March 08;
- [10.] Barigazzi J., Kijewski L. and Moens B. (2022). EU rewrites oil ban to give Hungary, Slovakia and Czech Republic more time, Politico, May 6;
- [11.] Slav I. (2022). The West Is Suffering The Consequences Of Poor Energy Decisions, Oilprice.com, April 10;
- [12.] ZeroHedge, a (2022) Environmentalists Are Crushing Europe's Energy Independence Ambitions, Oilprice.com, April 10;
- [13.] ZeroHedge, b (2022). What Does The EU Need To Do To Wean Itself Off Russian Fossil Fuels?, Oilprice.com, May 10.