

# The Impact of the Energy Crisis in Europe

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## Abstract

*The start of the war in Ukraine in the beginning of the 2022 had a significant impact on Europe, especially on the security of the gas supply. This has led to challenges and imbalances that require immediate action from the European Union in order to gradually end the reliance on imported Russian fossil fuels. As a result, the issue of energy security was brought into attention, gaining real importance at the international, regional and national level, being an extremely important sector for states from a social perspective, economic, political, technological. These developments usher in a new era of study and methodology for energy security.*

*This paper highlights the impact of the energy crisis in Europe that occurred due to the Russia-Ukraine war that started in the beginning of the year and also the measures that the EU took in order to mitigate the effects.*

**Key words:** Europe, energy, security, crisis

**J.E.L. classification:** O1, Q4

## 1. Introduction

Europe, especially its energy system, is strongly affected by the outbreak of the war in Ukraine and its continuation for more than 10 months, causing problems and imbalances, which require concrete measures to counteract its effects. These developments usher in a new era of study and methodology for energy security. One of the main purposes of the EU is to gradually ending its reliance on imported Russian fossil fuels.

The inadequate management of this crisis by the European Union and each individual state can generate devastating effects for the entire population.

This paper is aimed at researching the impact of the energy crisis in Europe that occurred due to the Russia-Ukraine war, that started in the beginning of the year and also the measures that the EU took in order to mitigate the effects.

## 2. Theoretical background

The concept of energy security has evolved, gaining a great scope and importance, as a result of the impact it has on a country and on its citizens, being a fusion of the notion of national security, sustainability, individual security, human rights (Sovacool, 2016). During the 1970s and 1980s, attention was directed to the consistent supply of oil at a low price, in the 2000s, emphasis was placed on securing energy sources in view of distribution to the population, but also the implications for the environment (Proskuryakova, 2018).

This notion can be approached differently, depending on the fields: natural sciences, arts, international relations, social sciences. According to the World Bank, energy security includes three major pillars: "energy efficiency, diversification of energy supplies and dealing with volatility" (World Bank, 2005, p.2). Energy security, according to the European Commission (2004), represents the availability and access to energy, regardless of form, at an affordable price. From the perspective of engineers or scientists, it is approached through the prism of research, the technological transfer system, innovation (Sovacool and Brown, 2010). The International Energy Agency's presents energy security as available and uninterrupted energy sources at an affordable amount of money (IEA, 2019).

From the perspective of consumers, we find two dimensions that are intertwined: the economic one, which looks at energy accessibility but also price volatility, and the physical one, which aims at energy procurement (Mansoon et al, 2014). Therefore, energy security can be approached from the point of view of supply, representing a priority of governments or from the point of view of services.

Energy security represents the provision to final consumers, in a fair manner, of efficient, accessible, ecological energy services (Sovacool BK, 2013), ensuring the protection of society, citizens, and the state in case of a power outage or an energy deficit. At the same time, energy security is ensured by government measures that follow the population's access to efficient energy sources at a convenient price (Gasser, 2020). According to Winzer (2012), there should be a separation of the term energy security, which defines it as a supply of energy according to demand, from political economic objectives (Winzer, 2012)

Thus, as a result of the many definitions and multitude of domains, the term energy security is slippery (Chester, 2010), but also dynamic as a result of the analysis carried out over a time horizon, which, according to analysts, cost effectiveness is not more important than stability (Hippel et al, 2011). At the same time, this term denotes the balance between elements such as "security of supply, affordability and the sustainability of energy provision" (Berling et al, 2022, p. 1).

Energy represents an essential element in the process of technological development that helps economic growth, leading to social well-being (Kosowski, 2022), found in most sectors of the economy (services, transport, industry).

Currently, conceptual energy security is made up of four components: "availability, accessibility, affordability and acceptability" (Kosowski, 2022, p. 2; Sovacool, 2010). The first component presents the actual presence of the energy resource, the next one describes obtaining the resource considering demographic, political, geographical aspects, etc., the third one considers the probability of accessing the resource, and the last one describes accessing the energy resource without had certain restrictions, obstacles (example: environmental) (Kosowski, 2022, p. 2).

### **3. Research methodology**

The main purpose of this article is to present the energy crisis that started this year, the impact of it in Europe and the measures taken by the European Union authorities, using the method of qualitative research. I began by reviewing the concept of energy security and providing the most representative definitions, then I presented the impact of the energy security, as well as the action taken to reduce and counteract its effects.

This research is divided into five sections, as follows: in the first part I presented the current European context that led to the outbreak of the energy crisis and formulated the research question: what was the impact of the energy crisis in Europe and the measures taken by the authorities? Secondly, I have presented the literature review regarding the concept of the energy security and its importance within a country and a region. In the third part I draw up the methodology and in the fourth part of this paper I highlighted the findings regarding the impact of the energy crisis in the European Union, as well as the measures taken by the authorities and the last part I formulated the main conclusions of my research

### **4. Findings**

Deep worries about the security of the gas supply in Europe were raised by Russia's invasion of Ukraine, and this had repercussions on the worldwide LNG market.

Since September 2021, Russia's strategic behavior of utilizing natural gas as a political weapon has been more apparent, so that the addition of gas from Russia, necessary for industrial processes, heating, etc., has been reduced by approximately 80% (IMF, 2022).

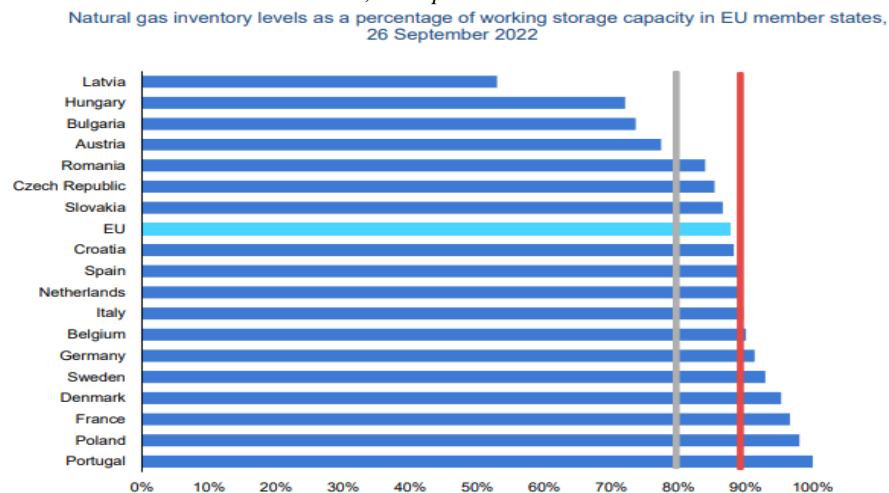
As a result of the international events, the issue of energy security was brought to the fore in forums and congresses, gaining real importance at the international, regional and national level, being an extremely important sector for states from a social perspective, economic, political, technological.

Therefore, international prices have reached new highs as a result of Russia's invasion of Ukraine and the ensuing reduction in gas supplies to Europe. This year, the price of oil reached its highest point since 2008 (IEA, 2022).

In accordance with a new storage law issued by the European Union (June 2022), storage facilities must be filled to at least 80% of their capacity prior to the winter of 2022–2023 and to 90% prior to all subsequent winter seasons. More strict storage requirements have been imposed by a number of EU members, including Belgium, France, Germany, and Italy, with fill objectives of more than 90%, according to the figure below (International Energy Agency, 2022).

In advance of winter, by the beginning of September, the European Union had met its 80% fill goal, and by the end of September 2022, storage levels had risen to almost 88% of operating capacity (International Energy Agency, 2022, p. 13).

Figure no. 1. Natural gas inventory levels as a percentage of working storage capacity in EU member states, 26 September 2022

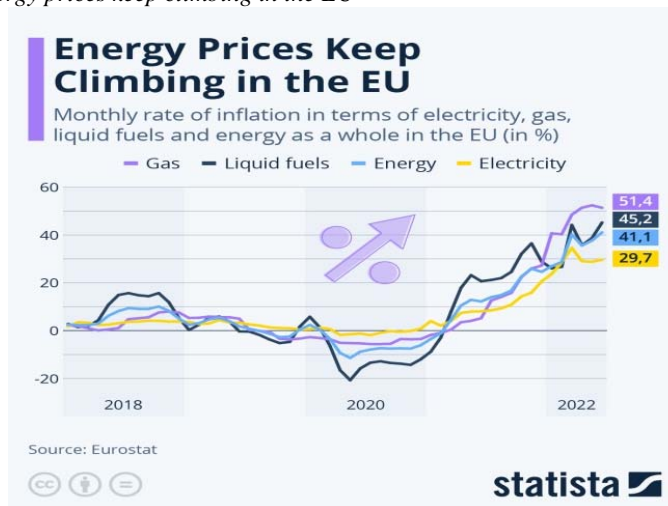


Source: International Energy Agency, 2022, p. 15

Europe has to increase LNG regasification capacity development, due to the fact that LNG has become crucial in the context of the shortage in Russian gas supplies in 2022 (International Energy Agency, 2022).

At the European level, energy prices rose sharply, gas having a major impact on inflation, which increased by 10.7% with a value of 51.4% in June (Statista, 2022). According to the Figure no. 2, gas hit 51.4% inflation, fuels (diesel, petrol, etc) 45.2% and energy 41.1% in June 2022.

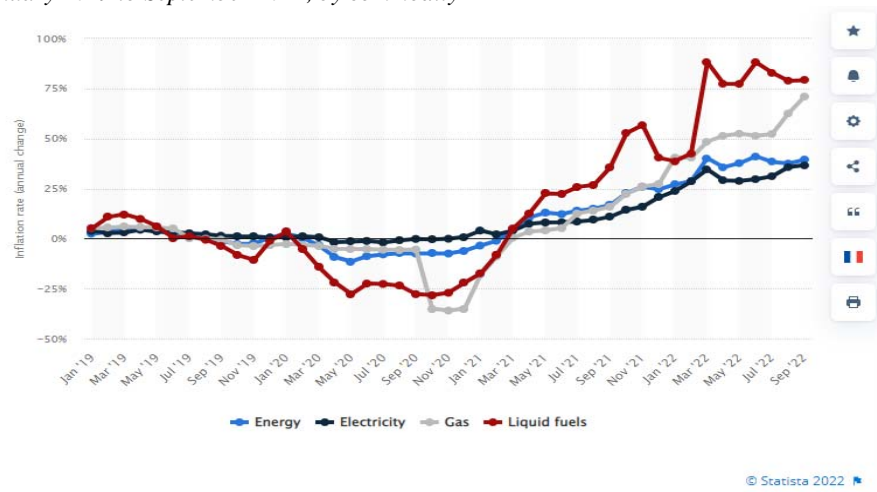
Figure no. 2. Energy prices keep climbing in the EU



Source: Statista, 2022, <https://www.statista.com/chart/28004/eu-energy-inflation-rates/>

Since the beginning of 2022, an increase in the inflation rates of several European energy goods has been observed. The most accelerated inflation growth rate was recorded by fossil fuels, 97.1%, followed by gas 70.9%, energy 39.4% and electricity 36.7% and can be seen in figure no. 3 (Statista, 2022). These events happened in the aftermath of Russia's invasion of Ukraine, which has caused anxiety about Europe's gas supply security as well as extreme energy price volatility (Statista, 2022).

Figure no. 3. Harmonized index of consumer prices (HICP) energy inflation rate in the European Union from January 2019 to September 2022, by commodity



Source: Statista, 2022, <https://www.statista.com/statistics/1328128/eu-energy-inflation-rate-by-commodity/>

As a result of the energy crisis, European countries have mobilized to ensure the supply of energy and to find effective solutions to the increase in prices. The measures taken in response address aspects such as: make ensuring EU consumers have access to affordable and competitive energy, enhancing the EU's emergency readiness and security of supply and increase EU nations' energy independence and resilience (European Council, 2022). At the same time, the EU's member states are collaborating on: enhancing cooperation and supply sharing, lowering energy expenses for companies and homes, lowering the EU's reliance on foreign energy, ensuring the supply of gas as well as quickening the switch to green (European Council, 2022). The changes in the energy market generated an increase in prices at the European level by approximately 7% compared to the first quarter of 2021 (IMF, 2022) plus inflation. In this situation, governments intervened with a series of policies to mitigate energy prices. In countries such as France, Austria, Portugal, Italy, Spain, measures were taken to mitigate the increase in prices, reducing taxes for a certain period of time (IMF, 2022).

Measures are also being taken to counter the volatility of energy prices, to support domestic consumers and businesses, to reduce dependence (imports) on fossil fuels from Russia, to diversify sources of supply (Versailles Declaration, March 2022) and to find alternative sources (renewable energy). Following the Versailles declaration, it was agreed on: broadening the sources of supply and transportation, notably by utilizing LNG (liquefied natural gas) and advancing biogas; increasing energy efficiency and controlling energy use, fostering the adoption of circular production and consumption practices, creating a European hydrogen market, speeding up the process of reducing our dependency on fossil fuels in general, completing and upgrading European gas and electricity network integration, as well as completely synchronizing the power systems across the EU, etc (Consilium Europa, 2022, p.5,6.).

An important step in this direction is the closure of partnerships with other countries in order to supply energy (European Council, 2022): Egypt, Israel, Azerbaijan, Canada, the United States of America.

In order to counteract the effects of the energy crisis, but also environmental issues, the European Union developed the Fit for 55 Package, by transposing into European legislation the objectives provided for in the European Ecological Package, which aims at reduced dependence on fossil fuels,

decreased reliance on energy and a healthier environment (European Council, Council of the European Union, 2022).

There are now two significant energy issues in Europe: the energy insecurity, which is a result of the continent's reliance on fossil fuels and susceptibility to outside aggression and the climate change brought on by emissions which affects the entire world (McKindsey, 2022). For the coming winters, the European Union should find ecological alternatives to energy security that would lead to a faster energy transition in order to fulfill the elements mentioned in REPowerEU targets. A series of measures in this direction would be: authorizations for renewable energy projects to be given more quickly, expand the manpower required to facilitate the switch to sustainable energy, increase energy efficiency via finance and public awareness campaigns, etc. (McKindsey, 2022).

## 5. Conclusions

In light of the structural uncertainty brought on by Russia's behavior, the security of the European Union's gas supply confronts unprecedented challenges. The situation quickly deteriorated into a full-fledged global oil crisis and the natural gas prices hit record highs, which had an impact on power prices in several markets (IEA, 2022).

In 2022, the European Union has worked together with the authorities, governments in order to increase supply security (World Economic Forum, 2022).

The war in Ukraine, as well as the disruptions occurring on the energy markets, have focused attention on renewable energy and alternative sources. Thus, as a result of the events that happened at the international level, it can be observed that energy security is a primordial branch for each individual state, and its recovery must be a priority for the government and authorities, as well as finding a consensus to achieve the faster and easier the transition to renewable energy, which provides a chance to accelerate growth (IMF, 2022). Therefore, the one of the best solution will be to investment in clean energy (renewable energy, electrification, etc) in order to ensure future energy security.

At the same time, we can see a revival of the concept of energy security that has received attention, both from policy makers and the academic environment.

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