

Coal's comeback in crisis: Assessing energy policy shifts in Germany and France during Russian import declines

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Abstract: *This study examines the resurgence of coal-fired power generation in Germany and France, a strategic reversal caused by a significant reduction in imports of Russian natural resources since the beginning of Ukraine's invasion. This comparative study aims to understand the implications of this energy policy shift on the broader European commitment to renewable energy and climate goals. This study uses a mixed methods approach presenting quantitative data on energy production, consumption, and emissions, and applying a qualitative analysis of energy policies in Germany and France. The period covered encompasses the beginning of the conflict in Ukraine, allowing the exploration and analysis of immediate and short-term responses in energy strategies. The findings reveal a significant but varying increase in coal-fired power generation in both countries. This resurgence is a direct consequence of significantly reduced Russian energy imports, challenging the previous trajectory towards renewable sources. This study shows how energy security concerns temporarily overrode long-term environmental objectives, particularly commitment to the Paris Agreement. Previous dependence on Russian gas in Germany has led to a more pronounced turn to coal, in contrast to France, which has a more diversified energy sector and a strong reliance on nuclear energy. The comparative analysis shows the diversity of the energy policy landscape in each country and their responses to the crisis. Also, this research provides insight into the complexity of balancing energy security and sustainability against geopolitical pressures. It emphasizes the need for resilient and adaptive energy policies that are able to respond to crises while at the same time maintaining a commitment to long-term environmental goals.*

Keywords: Germany, France, Coal, Power Generation, Russia, Environment

JEL Classification: F51, F59

ARTICLE HISTORY

Submitted: 3 November 2024

Accepted: 22 November 2024

Introduction

Cooperation between the European Union and Russia has a long historical foundation. Geographical proximity and shared borders have historically facilitated political and economic interactions, resulting in significant economic interdependence. One of the main pillars of the European Union-Russia relations has been energy trade (Siddi 2022). Until 2022, Russia has been the European Union's main long-term energy supplier, and energy was a cornerstone of their relations and an important aspect of the development of the European Union's energy policy (Tichý and Dubský 2024). In a historical context, the end of the Cold War paved the way for further expansion of energy trade between the European Union and Russia. In the early 2000s, the demand for oil increased significantly with the growth of the Chinese market, and the feeling of oversupply was replaced by a sudden or near-future shortage of supply in the energy market (Harsem & Claes 2013). Investments in new resources lagged behind the increase in demand, so the price of fuel reached \$147 in the summer of 2008 (Harsem & Claes 2013). Consequently, the European Union's demand for reliable energy supplies and Russia's desire to capitalize on its vast fossil fuel resources have led to a strong interdependence in the energy sector (Siddi 2022).

The interdependence of the EU member states and Russia has varied in relation to their energy potentials and economic needs. From an economic perspective, Russia's supply of energy resources to the European Union was largely welcomed, as it contributed to stability by increasing overall reserves. However, from a geopolitical standpoint, energy resources represent a strategic asset for expanding influence in international politics, particularly over energy-importing states (Harsem & Claes 2013). Consequently, major consumers of Russian energy within the European Union became inherently more vulnerable to political pressure and influence. Taking this into consideration, this research focuses on Germany, the primary economic engine of the Union despite its limited natural energy resources, and France, a country with significant potential in the energy sector.

To fully contextualize the dynamics of EU-Russia energy relations, this study focuses on the period 2010-2024, a time frame marked by significant geopolitical and economic developments. This period encompasses two major turning points that reshaped energy policy and interdependence: the annexation of Crimea in 2014 and the Russian invasion of Ukraine in 2022. These events prompted the European Union to reevaluate its energy dependence on Russia and accelerate energy diversification and alternative sources.

The annexation of Crimea served as a wake-up call, highlighting the geopolitical challenges of energy dependence. In this regard, the European Union launched several initiatives aimed at reducing dependence on Russian energy, including the European Energy Security Strategy in 2014 (European Commission 2014). This strategy emphasized diversification of supplies, investments in energy infrastructure, and the development of renewable energy sources. Progress in the second half of the 2010s within the EU was uneven, as many countries maintained significant dependence on Russian energy due to their economic and logistical constraints. However, the adoption of the European Green Deal in 2019 marked a renewed commitment to renewable energy and decarbonisation, setting ambitious targets for the energy transition (European Commission 2019). The European Green Deal is part of the EU's growth strategy, which includes policy initiatives that put the EU on a path to a green transition, with the ultimate goal of achieving climate neutrality by 2050 (European Commission 2019). The overall initiative was the EU's contribution to the Paris Agreement, ratified by all member states, aimed at reducing global warming. However, the Russian invasion of Ukraine in 2022 marked a turning point and a major challenge to the EU's long-term energy strategies, exposing the EU's vulnerability in the energy supply chain.

The energy crisis caused by the Russian invasion of Ukraine has forced European countries to rethink their energy strategies, leading to unexpected and often controversial policy changes. As countries that have for decades been committed to reducing carbon emissions and increasing the use of renewable energy, France and Germany were now struggling with the immediate need to secure energy supplies. This strategic turn is a direct consequence of the significant reduction in the import of Russian natural resources and the geopolitical turmoil caused by the sanctions imposed on Russia.

This crisis came at a time when Europe was already in the process of economic recovery due to the negative consequences of the COVID-19 pandemic. The combined effects of the pandemic and the conflict in Ukraine have led to significant changes in the energy policies of the European Union, significantly influencing long-term strategies for renewable energy. The most significant initial consequences were sharp increases in energy prices, significant changes in EU energy policies, and widespread environmental concerns.

Germany, as a country with significant dependence on Russian energy sources, found itself in an unenviable position. In 2021, 55% of its gas imports, 35% of its oil, and 45% of its coal were imported from Russia (IEA, 2022). On the other hand, France's dependence on Russian energy

products was significantly lower, with only 17% of its gas, 9% of its oil, and 26% of its coal imported from Russia (IEA, 2022). France's robust nuclear energy infrastructure, which produces around 70% of its electricity, has reduced vulnerability to gas and other energy supply disruptions, placing France in a relatively privileged position compared to Germany (IEA, 2022).

However, the energy crisis and sanctions against Russia have led to disruptions in energy prices throughout Europe, encouraging France and Germany (and other EU countries) to take urgent steps to adjust their energy policies. The European Union has adopted thirteen packages of sanctions against Russia since the beginning of the invasion (The Council of the EU 2024). The policy adjustment refers to diversification of the energy sources and to accelerate the process of developing new capacities for the production of renewable energy. For example, between 2012 and 2022, there was a decline in usage of primary energy production of solid fossil fuels, oil, natural gas, and nuclear energy at the European Union level (The Council of the EU, 2024). Because of the Russian invasion of Ukraine the European Union has been forced to accelerate the energy transition in order to adjust their economies to new circumstances.

This article examines the different strategies employed by these two countries in their energy supply diversification plans. For example, Germany significantly increased its coal-fired power generation, jeopardizing its climate goals, while France, although increasing its use of coal, continued to rely on its nuclear capacity (IEA, 2024). Despite having this advantage, France for instance increased LNG imports from Russia in the first months of 2024, leading to an obvious contradiction with its official government rhetoric, which is the loudest in support of Ukraine (Eurostat, 2024). Also, France remained the only EU country that did not meet the 2020 renewable energy targets, which actually highlights the challenges in balancing energy security and environmental sustainability. In a broader context, the European Union's response includes the 'RePowerEU' strategy based on the diversification of energy supply and reducing dependence on imports from Russia (European Commission, 2023). The European Union has reduced the gas share coming from Russia from 45 percent in 2021 to 15 percent in 2023 (The Council of the European Union, 2023). Such a reduction represents the result of a recommendation adopted by the Council in order to reduce its dependence from Russian gas. The intended policy seeks to undermine Russian economic capabilities and, as a result, its military capabilities, given that fossil fuels accounted for approximately 66 percent of Russian exports prior to the invasion (BP, 2023).

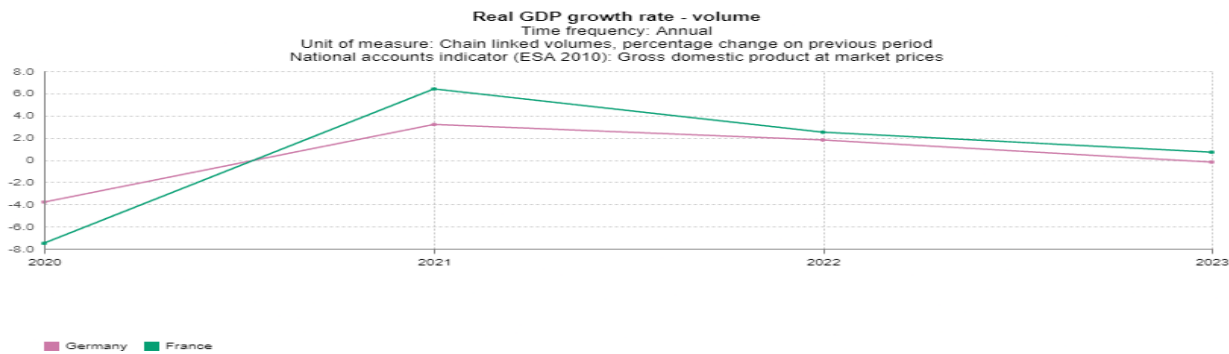
Theoretical background

This comparative study analyzes energy policy adjustments and shifts through the theoretical framework of political realism. Events and dynamics on the international level in international relations can be understood and interpreted only through reference to a conceptual framework, and a set of theories provides us with a choice of such frameworks (Burchill & Linklater, 2005). The conceptual framework of political realism focuses on the state, geopolitics, and war, which was the main reason why we based our analysis on this theory. This theory, which prioritizes the interests of states and their pursuit of power and security, provides a framework through which the policies of Germany and France can be understood in the times of crisis and assessing energy policy shifts. Concerns about energy security of the two states temporarily overrode long-term environmental goals, reflecting the perspective of political realism that states act in accordance with their interests, especially in times of crisis. As highlighted in the literature on the political theories in international relations, political realism is a tradition of analysis that foregrounds the imperative for states to conduct power politics based on national interests (Donnelly, 2005).

This theory emphasizes that states are the primary and most important actors on the international stage, and sees international relations as a primary struggle of states for power and security, placing the interests of international institutions on a secondary level. In liberal democracies, realism is the theory that everyone loves to hate since it claims to be an antidote to the naive belief that international institutions and law alone can preserve peace (Snyder, 2004). In general, realists argue that international institutions have limited influence on state behavior because institutions are primarily a reflection of the distribution of power in the international system (Mearsheimer, 1994). In light of this claim, we examine whether states within the European Union, and especially Germany and France, managed to adhere to an institutional approach to energy policy during the period of crisis relations with Russia. The biggest problem with institutional cooperation according to realists is the lack of central authority in an anarchic international system (Waltz, 1979). Using a mixed methods approach, this research analyzes empirical data on energy production, consumption, and emissions, in addition to a quantitative analysis of the energy policies of Germany and France. Covering the period from 2010, this study offers insight into dynamics of EU energy politics and relations with Russia encompassing immediate and short-term responses that have resulted by the occupation of Crimea and invasion of Ukraine in 2022. Also, this study illustrates the complex dynamics of energy policies in Europe's two most important economies, highlighting the need

for sustainable energy policies that are resilient to crises and dedicated to long-term climate objectives.

Figure 1. French and German GDP Growth between 2020 and 2023.



Source: Eurostat, available at <https://ec.europa.eu/eurostat/databrowser/view/tec00115/default/line?lang=en>

Germany

The act of Russian aggression towards Ukraine in February 2022 has often been described as a critical juncture. Critical junctures refer to ‘...(1) a concentrated, macro episode of innovation that (2) generates an enduring legacy’ (Collier 2022, 66). Indeed, this ‘enduring legacy’ manifested in economic, security, and political relations between the European Union and its member states, on one side, and Russia, on the other. The deep interconnection between Germany and Russia in the energy sector, particularly Germany’s dependence on Russian energy, has resulted in a significant shift in the German energy policy. This shift involves severing ties with Russia and intensifying the search for new energy sources. The table and figure presented below highlight the extent of Germany's dependence on coal from Russia and the changes that occurred after an act of aggression. While Russia was the primary coal supplier, imports from that country ceased in 2023, with Colombia and other states filling the void.

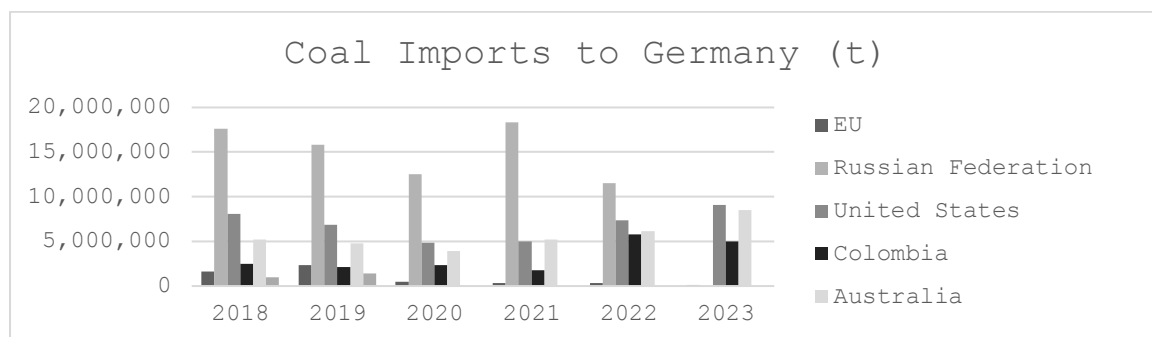
Table 1. The import of coal in Germany.

Origin Country	2018	2019	2020	2021	2022	2023
Total in tones	37,985,304	35,157,745	25,861,416	32,387,227	35,299,098	27,175,417

Russian Federation	17,640,868	15,795,233	12,554,604	18,339,774	11,551,837	.
United States	8,088,163	6,873,195	4,838,359	5,020,342	7,352,278	9,097,365
Colombia	2,500,208	2,108,781	2,313,984	1,778,629	5,754,458	5,013,559
Australia	5,183,864	4,810,234	3,931,393	5,215,430	6,178,667	8,494,116
Other Third Countries	987,678	1,407,762	.	.	.	.

Source: Destatis: Statistisches Bundesamt.

Figure 2. Data based on the table



The war in Ukraine and the subsequent disconnection of economic links with Russia have led to a rise in energy prices. In particular, in 2023 the energy prices in the industry were 40% higher compared to 2021 (Reuters 2023).

Following the Cold War, Germany adopted a policy towards Russia that centered on the notion that establishing robust economic relations would diminish the likelihood of conflicts. This approach persisted even after the annexation of Crimea in 2014, as this act of aggression was perceived as Russia's opposition to Ukraine's integration into NATO (Münkler 2023, 74–75).

However, starting in February 2022, the "enduring legacy" has compelled Germany to redefine its relationship with Russia and face heightened pressure to adapt to new security challenges. The German defense minister Boris Pistorius has repeatedly spoken about the possibility of a war in the next few years in Europe. Therefore, the German government has announced its intention to increase military spending and modernize its defense capacities (e.g. Pistorius 2024). In addition, there is a critical necessity to swiftly pursue a range of energy sources and expedite the transformation of the energy sector towards the production of renewable energy with zero emissions. The result of the policy change has contributed to the economic slowdown

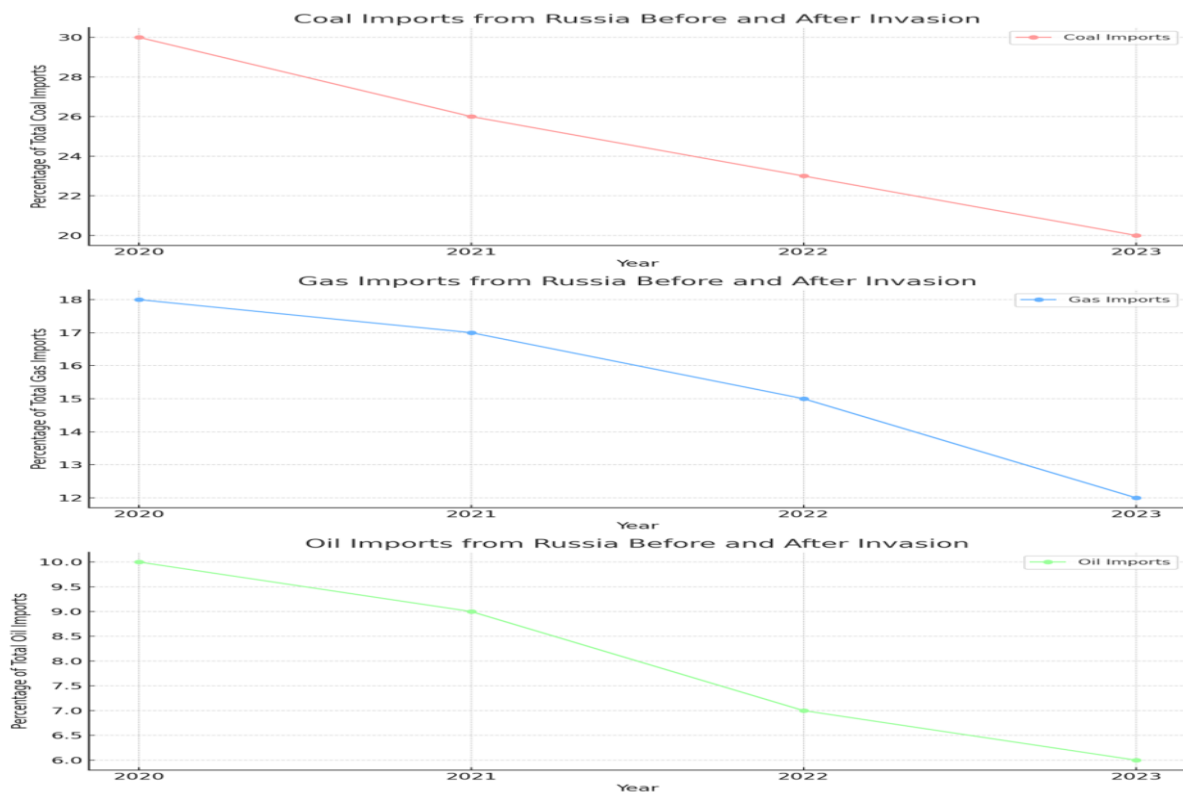
on a global level (Grömling 2023). In German case, the economic impact in 2022 and 2023 is projected to be 4.2% lower than the expected growth, amounting to 160 billion Euro or 2000 Euros per citizen in Germany (Zenzen 2024). The German response, however, involved an increase in the production of renewable energy, which represents a predefined path, while these processes have to be accelerated in order to meet the predefined criteria for renewable energy.

Germany, however, has taken into considerations related to possible losses based on the assumption that the continuation of the policies that persisted over three decades would encourage Russia to continue its policies that have started in 2008 in Georgia, and continued in 2014 in Ukraine, and further escalating in 2022. German approach puts an additional burden on its domestic industry and citizens due to the legal rule to become climate neutral by 2045. The policy is defined as a gradual process that includes several benchmarks to reduce the emissions. It encompasses infrastructure projects focused on expanding capacities for liquid natural gas (LNG) and increasing the production of wind or solar energy (Pepe 2022).

France

Although less dependent on Russian energy, France was not immune to the rise in prices that affected the wider European market. The price of electricity has increased due to increased gas and coal prices. Problems with the maintenance of the aging nuclear fleet have affected the volume of energy production and overall nuclear capacity in France, which has been a buffer against the volatility of energy prices since the beginning of the energy crisis. For this reason, the French government has increased investments in nuclear maintenance and development. It has also accelerated plans for renewable energy projects with the aim of energy security and less reliance on fossil fuels.

Figure 3. French Energy Dependency Graphs



Source: Eurostat, International Energy Agency (IEA), French Ministry for Environmental and Inclusive Transition, European Commission (2021-2023)

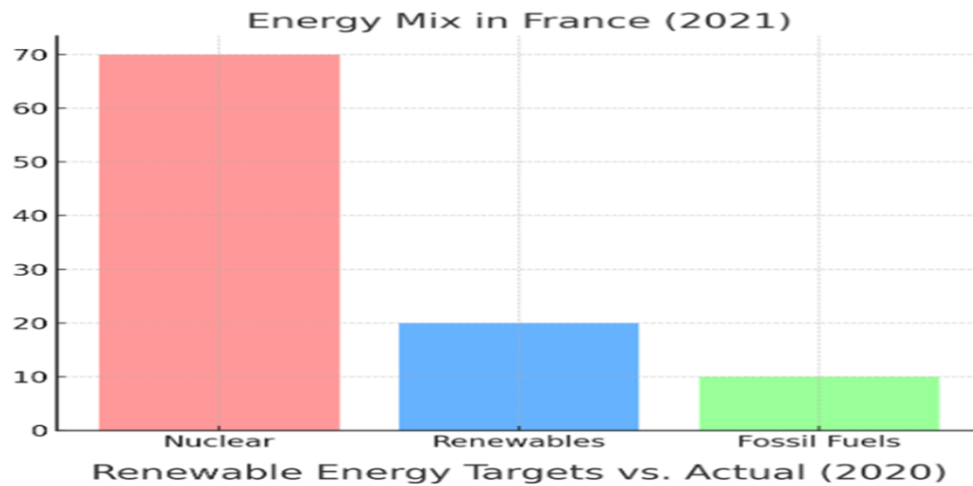
To address these challenges, the French government has adopted a set of different measures. One notable initiative is the "France Relance" (National Recovery Plan), which allocates significant funding for energy transition projects, including the modernization of nuclear facilities and the increase of renewable energy sources (Jaravel & Montout, 2024). This initiative aimed to reduce France's dependence on fossil fuels and increase energy resilience. Established in 2021 with a budget of 100 billion euros, the French reconstruction plan had two ambitions: to allow the economy to return to the pre-crisis level in the summer of 2022, and to improve the competitiveness of French businesses, preparing all economic players for the long-term challenges ahead (Jaravel & Montout, 2024). At the end of November 2023, the recovery plan had a commitment rate of 93% (89% at the end of 2022, with a target of 100% by that date) and a spending rate of 73% (Xavier Jaravel and Sylvie Montout 2024).

Moreover, France has intensified its efforts to diversify its energy potential. The state has significantly increased investments in wind, solar, and hydroelectric energy, noting the importance of renewable energy in achieving long-term energy security. According to a report by the French Ministry for Ecological Transition, the government has set ambitious goals of

increasing the share of renewable energy to 40% of energy production by 2030 (World Resources Institute 2021). According to the 2024 draft Finance Law, a budget of 62 billion euros will be allocated to the French Ministry of Ecological Transition and Energy Transition, an increase of 15% compared to last year (Bouillon-Duparc, 2023). This indicates the government's commitment to strategies and initiatives to expand renewable energy sources and diversify the country's energy potential.

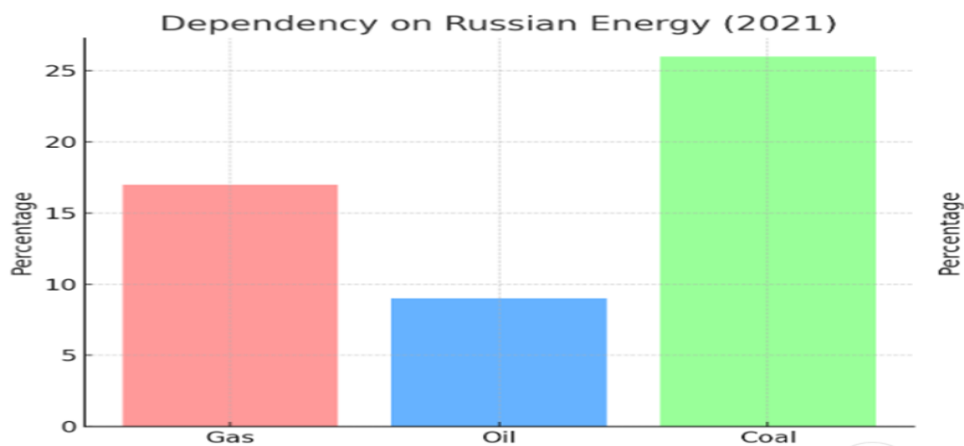
Furthermore, France's energy strategy includes fostering regional cooperation within the European Union to strengthen collective energy security. France, together with Germany, is an important factor in initiatives such as the European Green Deal, with the aim of producing and maintaining a resilient energy system throughout Europe. Regional cooperation within the European Union has been crucial for addressing energy challenges posed by dependence on Russian energy resources and for achieving a more integrated and secure European energy market. Although French dependence on Russian energy products before the invasion of Ukraine was significantly less compared to European countries, and above all Germany, geopolitical tensions and fluctuations in the energy market exposed France to vulnerabilities. Russia has been an important supplier of natural gas and oil to France, contributing to the country's energy mix. Before the invasion of Ukraine, France imported approximately 17% of its natural gas from Russia (International Energy Agency, 2023). The graphs below show data from Eurostat, the International Energy Agency, and the French Ministry of Ecology, illustrating the French energy mix in 2021 and France's dependence on Russian energy in 2021.

Figure 4. Energy Mix in France 2021



Source: French Ministry for the Ecological and Inclusive Transition, RTE (Réseau de Transport d'Électricité), EDF (Électricité de France) annual reports

Figure 5. Dependency on Russian Energy

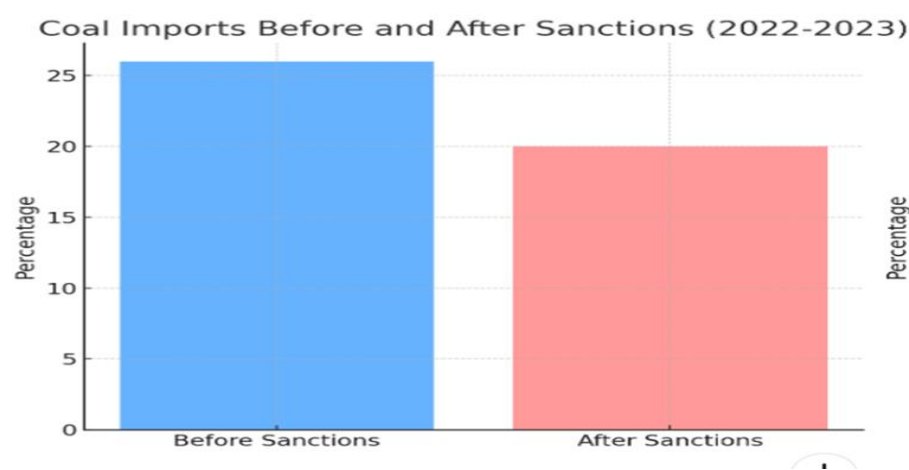


Source: Eurostat, International Energy Agency (IEA), French Ministry for the Ecological and Inclusive Transition

French dependence on Russian coal was relatively small compared to reliance on other energy sources. Before the invasion of Ukraine, coal made up a small part of the French energy mix, with imports primarily from countries such as the United States, Colombia, Australia. Nevertheless, Russia supplied a portion of French coal that was used for industrial use and during periods of high demand when other sources were constrained (International Energy Agency, 2023). Due to geopolitical tensions and sanctions against Russia, France has further

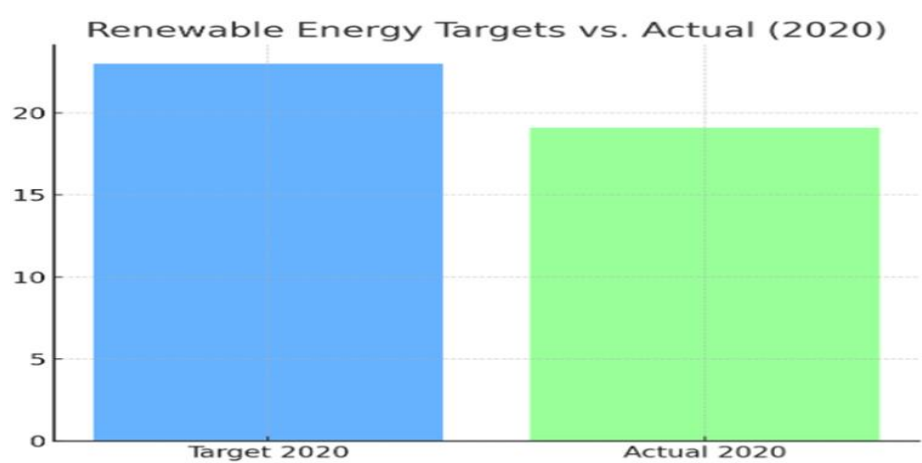
minimized its coal imports from Russia, turning to alternative suppliers and strengthening its commitment to reducing coal use as an overall part of a broader energy transition strategy towards renewables and nuclear power (European Commission 2023).

Figure 6. Coal Imports Before and After Sanctions



Source: European Commission energy reports, Eurostat, trade data from market analysts like Wood Mackenzie or S&P Global Platts.

Figure 7: Renewable energy Targets vs. Actual



Source: European Union renewable energy progress reports, National Renewable Energy Action Plans (NREAPs), European Environment Agency (EEA)

Analysis

Relations between the countries of the European Union and Russia have improved dramatically since the collapse of the Soviet Union. The improvement was marked by increased cooperation, with economic cooperation in particular providing the basis for the relationship. It was based on the assumption that economic cooperation would benefit all actors involved and reduce the potential for conflict. As a result, the arms race, one of the main features of the Cold War, lost its significance. From the Western point of view, it was "peace with fewer and fewer weapons" (Muenkler, p. 45) that was used as a tool. The post-Cold War period, before the invasion, from the European perspective, could be described as liberal. Hence, the invasion has contributed to a changed perspective. The then High Representative for Foreign and Security Affairs of the European Union wrote that "we must learn the language of power" (Borrell). The statement underlines the importance of a common approach of the European states in foreign policy and security matters, which, however, has always been the Achilles heel of European politics because of the inability to find a common position or to speak with one voice. The imposition of sanctions on Russia had the aim of weakening the Russian economy and consequently reducing its capacity to fight the war. In particular, the ban on energy imports from Russia to the European Union was seen as a tool that would harm Russia the most because the value of fossil fuels in the pre-war period was around 66 percent of total exports, which indicates a high reliance on the revenues made through trade. In other words, because of the lack of a diversified export portfolio, the ban on imports seemed to be a logical choice. Hence, the actions of intentionally banning the imports, while at the same time, suffering from these undertakings, because of the need to find additional energy sources and the rise of the costs, indicate the readiness of the European Union to confront the challenges.

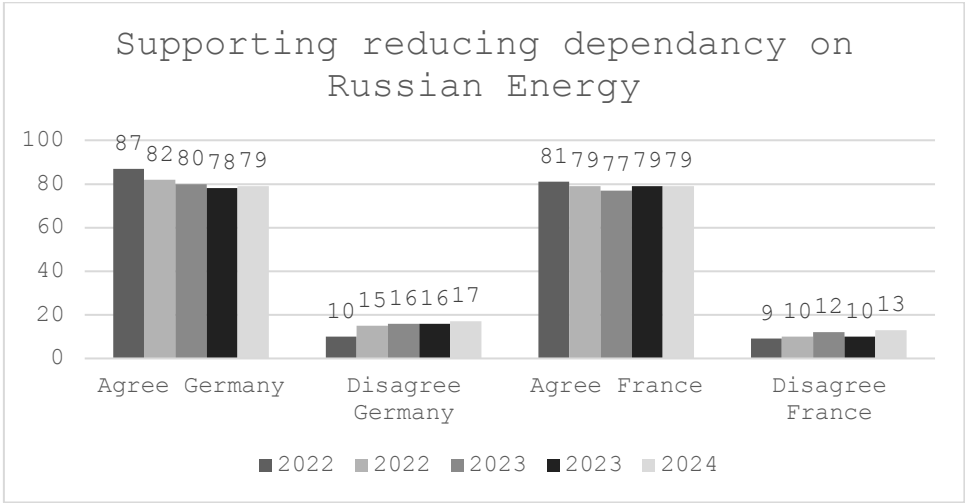
German and French responses to the Ukraine war cannot be observed as isolated policies, but rather as a part of a larger policy, which is embedded in the European Union's response to the Russian invasion of Ukraine. These policies aim to enhance the European Union's standing as a global player capable of influencing global affairs. Such an approach, however, represents a continuation of previously adopted positions to increase its global presence, which often failed due to varying interests of the member states (e.g. Bindi 2009). The European Union institutions have adopted strategies which emphasize the breach of international law by Russia (e.g. EEAS

2016, 33), but the dependance on Russian energy prevented the EU from taking stricter actions that include cutting economic ties.

The intentional policies of the EU member states that are harming German and French economies and forcing these states to diversify their energy supplies represent a new approach in the post-Cold War era. Our argument posits that these states are deliberately contemplating losses with the aim of weakening the adversary, thereby curbing their capacity to wage war and preventing the conflict from spreading to other European territories. Such approach represents a change due to focus on mutual cooperation in the post-Cold War era. The Russian government was surprised by this particular approach, as the actions of the European Union member states differed from previous ones that included milder sanctions and condemnation but still maintained trading partnerships.

These policies found sound support among German and French citizens, as data from public opinion polls suggest. The support varies between 78 and 87 percent, as presented in the following figure.

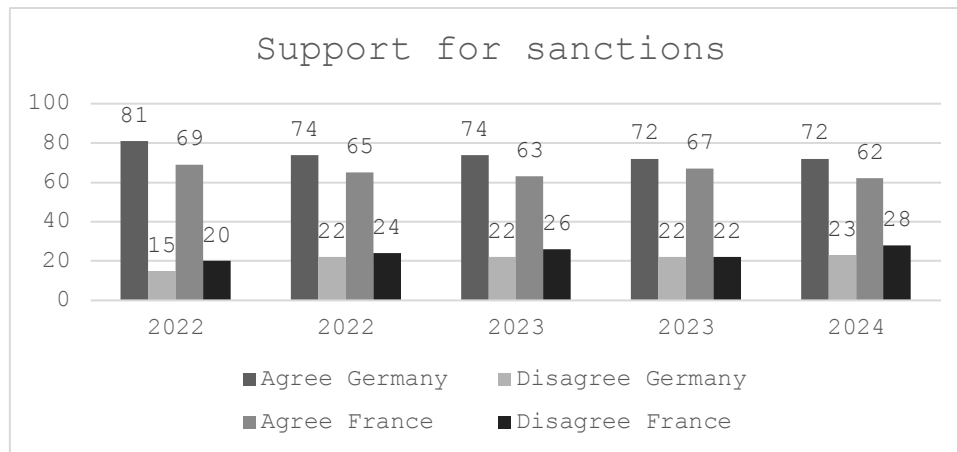
Figure 8. Supporting reducing dependency on Russian Energy



Source: Standard Eurobarometer reports 97, 98, 99, 100, 101

Moreover, the citizens in these two states support also the sanctions of the European Union imposed on Russia, as the following figure shows.

Figure 9. Support for sanctions



Source: Standard Eurobarometer reports 97, 98, 99, 100, 101

Given the substantial backing for sanctions in both states, it alleviates the burden on national governments to adhere to such a policy. The high support results from the successful communication of the officeholders and the strong presence of the Ukraine war in the media that helped to frame the opinion of the citizens. In other words, any other framing might cause a different outcome.

Before the invasion of Ukraine, both Germany and France had pragmatic energy policies that included significant energy imports from Russia, guided by economic benefits and the need for a stable energy supply. This pragmatic approach is consistent with the realist perspective, which prioritizes economic and security interests over ideological considerations. However, the events in Ukraine marked a turning point. The geopolitical reality of Russian aggression in Ukraine has forced Germany and France to reexamine their energy dependencies through the lens of realism. The priority of securing national interests and regional stability encouraged these countries to take unprecedented steps in diversifying their energy sources and reducing their reliance on Russian energy. From a realistic perspective, these policies can be seen as measures to ensure state security and preserve sovereignty in an increasingly changing international environment. By diversifying their energy supplies, Germany and France not only reduce their vulnerability to potential Russian coercion but also strengthen their strategic autonomy within the European Union (Mearsheimer, 2014).

Conclusion

The paper analyzed how the Russian invasion of Ukraine has affected the German and French energy sector given the fact that the EU, for the most part, has imposed sanctions on Russia by cutting economic ties. The dependence of EU member states on Russian energy products has disrupted the markets in Germany and France, whereby the costs for Germany were higher due to higher share of Russian energy in the leading European economy. The main argument of this work is that these countries have deliberately taken into consideration the economic losses to weaken the Russian economy. Moreover, the argument is that the actions must be seen as part of a bigger strategy that involves strengthening the role of the EU as a global actor.

In conclusion, the responses of Germany and France illustrate a significant shift in energy policies driven by imperatives of national security and geopolitical strategy, as stated by realist theory. By reducing reliance on Russian energy, states not only address the immediate threat, but also contribute to the broader effort to ensure the strategic autonomy of the European Union. This collective approach emphasizes the importance of unity and cooperation among EU members in facing complex international challenges. Future research should continue to monitor the long-term impacts of these policies on national economies and the stability of the European energy market, as well as on the dynamics of EU-Russia relations.

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