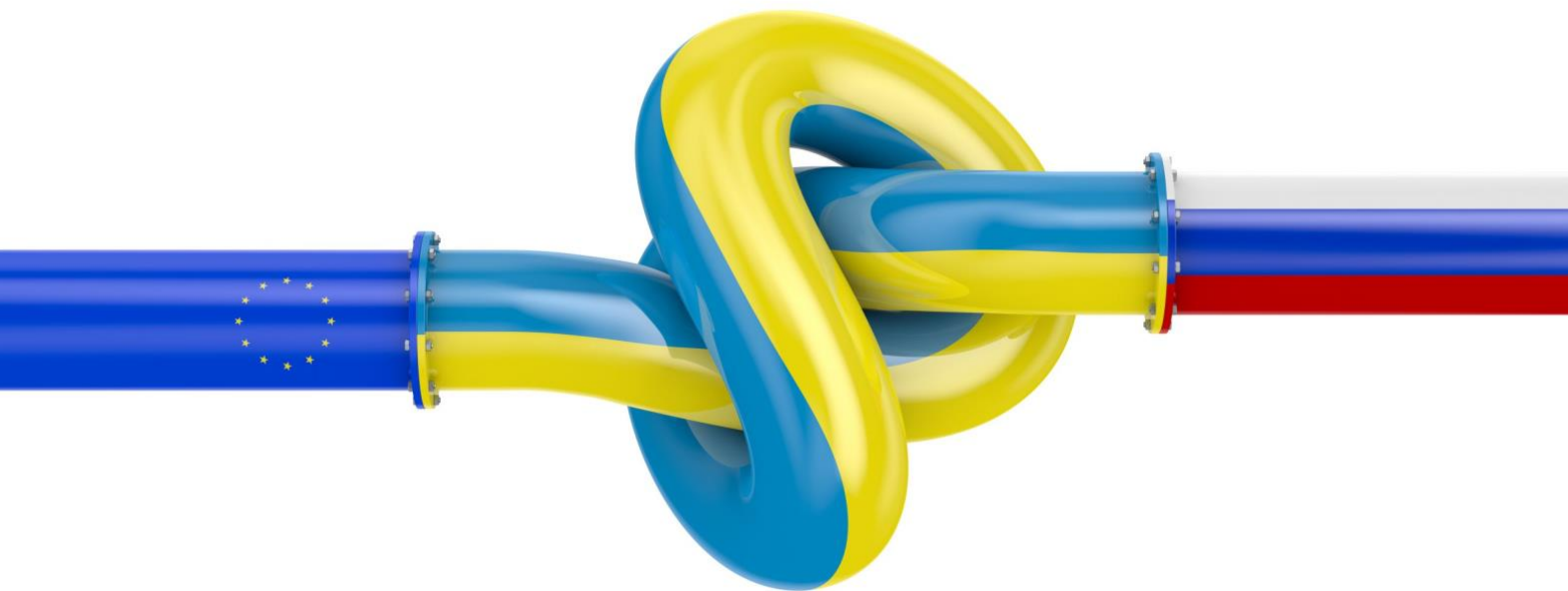




POLICY PAPER

How Can Ukraine-Russia Conflict Influence the Energy Security of the EU?

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1. Background Information

1.1. What is Energy Security?

Energy security is a multidimensional concept because it carries the dimensions of availability, affordability, technological development, environmental sustainability, and governance.¹ The interpretation of these dimensions of the energy security changes according to whether the energy actor is on the side of energy consuming (importing) countries or on the side of energy producing (exporting) countries. While for importing countries, energy security basically means securing supply channels with low prices as much as possible, it means, for energy exporting countries, ensuring the continuation of demand and assuring that the transfer of energy sources will be in an adequate price for a long term.² Additionally, in the energy security relations between the exporting and importing sides, there is also another actor which is transit countries. For transit countries, energy security is related to maximizing their profits from the transit and transportation services that they provide between two sides.³

The International Environment Agency (IEA) underlines the fact that energy security is more likely to be customer-centric concept.⁴ Therefore, the availability and affordability dimensions are more important for the importing countries. The World Energy Council (WEC) suggests minor changes to the definition of the IEA.⁵ For the WEC, energy security is the effective governance of energy supplies from internal and external sources and the ability to meet energy needs of the future generations. Regarding the definition of the WEC, energy security can be provided if it is sustainable. However, it should be noted that this definition does not emphasize the idea of the affordability. That's why the use of these definitions are changeable and dependent on which perspective an energy actor desires to benefit from.

1.2. What is the EU Dimension of the Russia-Ukraine War in terms of Energy Security?

The invasion preparations of Russia began in 2021. Russia deployed its military troops in a large scale along its border with Ukraine.⁶ Although the United States of America (USA) and the EU accused Russia of planning to attack Ukraine, Russia denied this claim recursively until 23 February 2022.⁷ The invasion began on 24 February, 2022⁸ with the announcement of special military operation to “demilitarize” and “denazify” Ukraine by Vladimir Putin –who is the president of Russia.⁹ The war has caused displacement of millions of people and lots of civilian casualties.¹⁰

The invasion has been condemned in a huge scale at the international level. Apart from the humanitarian side of the war, it has other sides that make international actors the part of the war. In this regard, the Russia-Ukraine war concerns not only fighting parties but also their neighboring countries in terms of especially, the interruption of energy flow and an increase in energy prices. The high dependence of some member countries of the EU (such as Germany, Poland, and Slovakia) on Russia in terms of natural gas transfer makes the EU more involved in the situation. On the one hand, Russia has abundant energy reserves (such as, especially, natural gas and oil) and is the main natural gas exporting country to the EU.¹¹ On the other hand, Ukraine is the key corridor country that ensures

¹ Azzuni, A., & Breyer, C. (2018). Definitions and dimensions of energy security: A literature review. *Wiley Interdisciplinary Reviews. Energy and Environment*, 7(1), E268-N/a.

² Zhiznin, S. Z., Timohov, V. M., & Dineva, V. (2020). Energy security: Theoretical interpretations and quantitative evaluation. *International Journal of Energy Economics and Policy*, 10(2), 390–400.

³ Zhiznin, S.Z. (2010). Russian energy diplomacy and international energy security (geopolitics and economics). *Baltic Region*, 1(3), 7–17. Available from:

http://www.ssoar.info/ssoar/bitstream/handle/document/25529/ssoar-balticreg-2010-1-zhiznin-russian_energy_diplomacy_and_international.pdf?sequence=1

⁴ International Energy Agency. (2014). *World Energy Outlook 2014*. Retrieved from <https://iea.blob.core.windows.net/assets/e6f58562-203e-474c-97a3-486f409aa7ff/WE02014.pdf>

⁵ 2014 World Energy Issues Monitor. (n.d.). Retrieved April 16, 2022, from <https://www.worldenergy.org/assets/downloads/World-Energy-Issues-Monitor-2014.pdf>

⁶ Holland, S., Shalal, A., & Landay, J. (8 April 2021). Paul, Franklin; Dunham, Will (ed.). "Russian force on Ukraine border larger than any time since 2014, U.S. says". Reuters. File photo by Kevin Lamarque. Washington D.C.: Thomson Corporation. Retrieved from <https://www.reuters.com/article/us-ukraine-crisis-usa-idUSKBN2BV2Z3>

⁷ Taylor, A. (24 February 2022). "Russia's attack on Ukraine came after months of denials it would attack". The Washington Post. Photograph by Evgeniy Maloletka (Associated Press). Nash Holdings. ISSN 0190-8286. OCLC 2269358. Archived from the original on 24 February 2022. Retrieved from <https://www.washingtonpost.com/world/2022/02/24/ukraine-russia-denials/>

⁸ Nikolskaya, P. & Osborn, A. (24 February 2022). "Russia's Putin authorises 'special military operation' against Ukraine". Retrieved from <https://www.reuters.com/world/europe/russias-putin-authorises-military-operations-donbass-domestic-media-2022-02-24/>

⁹ Grunau, A., von Hein, M., Theise, E., & Weber, J. (25 February 2022). "Fact check: Do Vladimir Putin's justifications for going to war against Ukraine add up?". Deutsche Welle. Retrieved from <https://www.dw.com/en/fact-check-do-vladimir-putins-justifications-for-going-to-war-against-ukraine-add-up/a-60917168>

¹⁰ Team, T. (2022, April 14). Ukraine War in maps: Tracking the Russian invasion. Retrieved April 16, 2022, from <https://www.bbc.com/news/world-europe-60506682>

¹¹ Bartuska, V., Lang, P., & Nosko, A. (2019, November 28). The geopolitics of energy security in Europe - new perspectives on shared security: NATO's next 70 Years. Retrieved from <https://carnegieeurope.eu/2019/11/28/geopolitics-of-energy-security-in-europe-pub-80423>

HOW CAN UKRAINE-RUSSIA CONFLICT INFLUENCE THE ENERGY SECURITY OF THE EU?

Russian gas to transport into the EU countries.¹² Therefore, the continuation of the war will erode the energy diplomacy of the EU with these two countries and cause the revision of energy strategies that will be adopted by the EU.

The EU energy strategy is in line with the definition of energy security by the IEA, which is that energy security is based on the principle of “the uninterrupted availability of energy sources at an affordable price”.¹³ Broken and unstable relations with Russia impede the EU to ensure this principle and have led the EU to put more effort to break its dependency on the fossil fuel sources of Russia before 2030.¹⁴ Especially, the current crisis has demonstrated that the EU needs to diversify its energy supplying channels and to take more energy efficiency measures.¹⁵ In this direction, extension of natural gas pipelines or a new additional gas hub in the Southern Europe with the additional quantities of natural gas coming from the Caspian, Central Asia, the Middle East as well as the Eastern Mediterranean can be addressed.¹⁶ Additionally, the adoption of renewable and sustainable energy technologies and increasing Liquefied Natural Gas (LNG) capacity can ensure the EU to be able to decrease its dependency on the natural gas of Russian and the transit country position of Ukraine.¹⁷

18

In this paper, the objective is to show what energy security is and means for the EU and to offer policy recommendations about what can be done further developments and bolstering energy security of the EU. In this regard, this policy paper will be framed around the following research question: How can the Russia-Ukraine war influence the energy security strategies and efforts for creating an energy union of the EU?

2. Current State of Play

2.1. How Have the Russia-Ukraine Conflicts Affected the Energy Security Strategies of the EU?

Energy issue has been the component of the EU agenda since the very beginning. The integration and establishment process of the EU was based on the regulation and control of the steel, coal, and nuclear energy in Europe.¹⁹ During this integration process, the EU had to deal with several energy-related problems. For example, the Union faced mitigation and interruption in the supply of oil and petroleum products in the 1970s²⁰ and difficulties in the liberalization of energy market in the 1990s and 2000s. When overcoming these problems, especially with the impact of diversity in the political and economic aspirations of the member countries, the EU endeavored not only to fulfill these aspirations but also evolve its energy strategies –such as energy security, sustainability, and competitiveness– accordingly to satisfy its all member countries.

After the oil crisis in 1970s, the EU did not experience any persistent disruption about its energy supply for more than 30 years until 2006 which is the first supply gas crisis.²¹ This situation led the EU not to prioritize the notion of energy security in its agenda and not to adopt measures to be able to strengthen its energy security.²² With the disputes over price adjustment and debts on natural gas

¹² Siddi, M. (2018). The Role of Power in EU-Russia Energy Relations: The Interplay between Markets and Geopolitics. *Europe-Asia Studies*, 70(10), 1552-1571.

¹³ International Environmental Agency. (n.d.). Energy security - Ensuring the uninterrupted availability of energy sources at an affordable price. Retrieved from <https://www.iea.org/areas-of-work/ensuring-energy-security>

¹⁴ European Commission. (2022). REPowerEU: Joint European Action for more affordable, secure and sustainable energy. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A108%3AFIN>

¹⁵ McWilliams, B., Sgaravatti, G., Tagliapietra, S., & Zachmann, G. (2022) Preparing for the first winter without Russian Gas. Retrieved from <https://www.bruegel.org/2022/02/preparing-for-the-first-winter-without-russian-gas/>

¹⁶ European Commission. (2020). Diversification of gas supply sources and routes. Retrieved from https://energy.ec.europa.eu/topics/energy-security/diversification-gas-supply-sources-and-routes_en#documents

¹⁷ European Commission. (2022). REPowerEU: Joint European Action for more affordable, secure and sustainable energy. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A108%3AFIN>

¹⁸ European Commission. (2016). Commission Staff Working Document on an EU strategy for liquefied natural gas and gas storage (SWD(2016) 23 final). Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022D0582>

¹⁹ Syriopoulos, C. (2020). Has the Energy Union Strategy Delivered Concrete Solutions to Europe's Energy Security Question? In *Aspects of the Energy Union (Energy, Climate and the Environment)*, pp. 17-46). Cham: Springer International Publishing.

²⁰ European Commission. (1973). First Council Directive of 24 July 1973. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022R0328>

²¹ Ruble, I. (2017). European Union energy supply security: The benefits of natural gas imports from the Eastern Mediterranean. *Energy Policy*, 105, 341-353.

²² Syriopoulos, C. (2020). Has the Energy Union Strategy Delivered Concrete Solutions to Europe's Energy Security Question? In *Aspects of the Energy Union (Energy, Climate and the Environment)*, pp. 17-46). Cham: Springer International Publishing.

HOW CAN UKRAINE-RUSSIA CONFLICT INFLUENCE THE ENERGY SECURITY OF THE EU?

in 2006 between Russia and Belarus-Ukraine duo –that are the main transit countries for the transfer of the gas to Europe– and the escalation of the same problem in 2009 resulting in the cutting of all supplies (both to and through Ukraine) by Gazprom, the EU paid more attention to revising its energy security strategies and policies.²³ Although the EU began to focus on climate mitigation policies and intertwine it with its energy strategies in second half of 2000s, the 2009 gas crisis led the EU to refocus on external energy relations with third parties.²⁴

During this interruption in supplying process through Ukraine, the inauguration of the Blue Stream gas pipeline –that links Russia to Europe through Turkey– and starting actively use of this pipeline have allowed the percentage of natural gas transfer through Ukraine to fall from 78% to 70% in 2008 and 67% in 2010.²⁵ Additionally, the inauguration of Nord Stream –that transfers natural gas directly from Russia to Germany– in 2011 enabled the further redirection of gas transition from Ukraine as a transit country and decrease the Ukraine’s share below 50% in 2017.²⁶ Yet, still, the existence of the domination of Russian natural gas in Europe increased concerns of the European Commission, which led the Commission to emphasize this highly reliance on the Russian gas.²⁷

Despite of all these problems in the energy supply, Russia remained the main natural gas exporting country to the EU, which provided one third of all natural gas imports of the EU in 2018.²⁸ Especially, although the Euromaidan protests in Ukraine in 2014 caused that Russia confronted with the EU not only economically but also politically over incidents in Ukraine, Russia provided 37% of the EU’s natural gas imports.²⁹ These figures indicate to what extent two actors are interdependent on each other on the energy issue. Yet, as it is seen, this interdependence is a kind of asymmetrical interdependence which is not in favor of the EU because of its consumer position.

As a response to this dependency, the EU needed to diversify its supply channels.^{30 31} In this regard, the Southern Gas Corridor is regarded as an option because it can bring natural gas from “the Caspian Basin, Central Asia, the Middle East, and the Eastern Mediterranean Basin” to the EU.³² It provides cooperation with gas suppliers of the Caspian region³³ –such as Kazakhstan, Turkmenistan, Uzbekistan, and especially, Azerbaijan that have 12.1% proved natural gas reserves.³⁴ Additionally, the EU aims to support the construction of “the Trans Anatolia Natural Gas Pipeline (TANAP) and the Trans-Adriatic-Pipeline (TAP) to transport gas from Azerbaijan to Italy via Georgia, Turkey, Greece, Albania and the Adriatic Sea”.³⁵ Moreover, with the exploration of gas fields in the Eastern Mediterranean Region (EMR) in 2010s such as the Leviathan in 2010, the Aphrodite in 2011, and the Glaukos in 2019³⁶, the EU considered the EMR a strategic partner to alternate its supply routes.³⁷

²³ Sauvageot, E. (2020). Between Russia as producer and Ukraine as a transit country: EU dilemma of interdependence and energy security. *Energy Policy*, 145, 111699.

²⁴ Rodríguez-Gómez, N., Zaccarelli, N., & Bolado-Lavin, R. (2016). European ability to cope with a gas crisis. Comparison between 2009 and 2014. *Energy Policy*, 97, 461-474.

²⁵ IHS CERA. (2012). Natural gas and Ukraine’s energy future. Ministry of Energy and Coal Industry of Ukraine. Available from: <http://s05.static-shell.com/content/dam/shell-new/local/country/zaf/downloads/pdf/research-reports/Ukraine-Policy-Dialogue-report.pdf>

²⁶ Nord Stream. (2018). Nord stream reaches average utilisation of 93% in 2017 – 51 bcm delivered to the European union. Available from: <https://www.nord-stream.com/press-info/press-releases/nord-stream-reaches-average-utilisation-of-93-in-2017-51-bcm-delivered-to-the-european-union-500/>

²⁷ European Commission. (2010). Energy infrastructure priorities for 2020 and beyond: A blueprint for an integrated European energy network (COM (2010) 677 final). Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0677&from=EN>

²⁸ Sauvageot, E. (2020). Between Russia as producer and Ukraine as a transit country: EU dilemma of interdependence and energy security. *Energy Policy*, 145, 111699.

²⁹ Siddi, M. (2017). The EU’s gas relationship with Russia: Solving current disputes and strengthening energy security. *Asia Europe Journal*, 15(1), 107-117.

³⁰ European Council. (2007). Brussels European Council 8/9 March 2007 Presidency Conclusions. Retrieved from http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/93135.pdf

³¹ European Commission. (2016). Communication on an EU strategy for liquefied natural gas and gas storage (COM/2016/049 final). Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0049&from=EN>

³² European Commission. (2020). Diversification of gas supply sources and routes. Retrieved from https://energy.ec.europa.eu/topics/energy-security/diversification-gas-supply-sources-and-routes_en#documents

³³ Ibid

³⁴ BP. (2019). Statistical review of world energy. Retrieved from <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf>

³⁵ Ruble, I. (2017). European Union energy supply security: The benefits of natural gas imports from the Eastern Mediterranean. *Energy Policy*, 105, 341-353.

³⁶ Kim, T., & Shin, S. (2021). Competition or cooperation? The geopolitics of gas discovery in the Eastern Mediterranean Sea. *Energy Research & Social Science*, 74, 101983.

³⁷ European Commission. (2020). Diversification of gas supply sources and routes. Retrieved from https://energy.ec.europa.eu/topics/energy-security/diversification-gas-supply-sources-and-routes_en#documents

HOW CAN UKRAINE-RUSSIA CONFLICT INFLUENCE THE ENERGY SECURITY OF THE EU?

38

Natural gas

Total proved reserves

	At end 1998 Trillion cubic metres	At end 2008 Trillion cubic metres	At end 2017 Trillion cubic metres	At end 2018			
				Trillion cubic metres	Trillion cubic feet	Share of total	R/P ratio
Azerbaijan	0.7	1.1	1.3	2.1	75.2	1.1%	113.6
Kazakhstan	1.3	1.3	1.0	1.0	35.0	0.5%	40.7
Russian Federation	33.4	34.0	38.9	38.9	1375.0	19.8%	58.2
Turkmenistan	2.5	8.2	19.5	19.5	688.1	9.9%	316.8
Uzbekistan	1.2	1.3	1.2	1.2	42.7	0.6%	21.4
Other CIS	†	†	†	†	1.2	*	113.1
Total CIS	39.2	45.9	62.0	62.8	2217.4	31.9%	75.6

Thanks to the Shale Gas Revolution –which refers to “the combination of hydraulic fracturing and horizontal drilling”—³⁹, the US increased its production of oil and natural gas significantly.⁴⁰ This transformation brought the USA to the position of gas exporting country. Liquefied natural gas (LNG) is the product of this transformation. It has been regarded as an another way for the diversification of supply channels, which contributes to securing gas transfer to Europe by the European Commission.⁴¹ The Commission prioritized high level energy dialogues for the LNG supplies from especially, Algeria, the USA, and Canada.⁴² Yet, since any possible terrorist attack or any other problem on the carrier causes the occurrence of supply insecurities, the prices in the LNG market are higher than gas transfer through pipelines.^{43 44}

The second half of 2021 has witnessed a price hiking in natural gas in Europe. This increase in prices remained also at the beginning of 2022.^{45 46} In addition to gas prices, since the EU had the lowest natural gas storage level of the last ten years, the availability of natural gas came into question as well because of an increase in demand, the Covid-19 pandemic, and technical challenges.^{47 48} This situation has been regarded as an opportunity to criticize the green agenda of the EU. However, contrary to blaming the green agenda of the EU, this problem derived from, to some extent, the inability of countries to replacements of fossil fuels with renewable energy sources.^{49 50}

³⁸ BP. (2019). Statistical review of world energy. Retrieved from <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf>

³⁹ The U.S. Shale Revolution. (2020, June 19). Retrieved from <https://www.strauscenter.org/energy-and-security-project/the-u-s-shale-revolution/#:~:text=The%20E2%80%9CShale%20Revolution%E2%80%9D%20refers%20to,total%20U.S.%20crude%20oil%20production>

⁴⁰ Brown, S. & Yucel, M. (2013) “The Shale Gas and Tight Oil Boom: U.S. States’ Economic Gains and Vulnerabilities,” Council on Foreign Relations. Retrieved from https://cdn.cfr.org/sites/default/files/pdft/2013/10/Energy_Brief_Brown_Yucel.pdf

⁴¹ European Commission. (2016). Communication on an EU strategy for liquefied natural gas and gas storage (COM/2016/049 final). Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0049&from=EN>

⁴² Ibid

⁴³ Sauvageot, E. (2020). Between Russia as producer and Ukraine as a transit country: EU dilemma of interdependence and energy security. *Energy Policy*, 145, 111699.

⁴⁴ Jaganathan, J. (2021, October 03). Explainer: What's behind the wild surges in global LNG prices and the risks ahead. Retrieved April 16, 2022, from <https://www.reuters.com/business/energy/whats-behind-wild-surges-global-lng-prices-risks-ahead-2021-10-01/>

⁴⁵ Mišik, M. (2022). The EU needs to improve its external energy security. *Energy Policy*, 165, Energy policy, 2022-06, Vol.165.

⁴⁶ EUSOTAT. (2022). Electricity and gas prices in the second half of 2021. Retrieved from <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220429-2>

⁴⁷ Zachmann, G., Sgaravatti, G., & McWilliams, B. (n.d.). European natural gas imports. Retrieved April 16, 2022, from <https://www.bruegel.org/publications/datasets/european-natural-gas-imports/>

⁴⁸ Economist. (2021). Why has the price of electricity in Europe reached record highs? Retrieved from <https://www.economist.com/the-economist-explains/2021/09/15/why-has-the-price-of-electricity-in-europe-reached-record-highs>

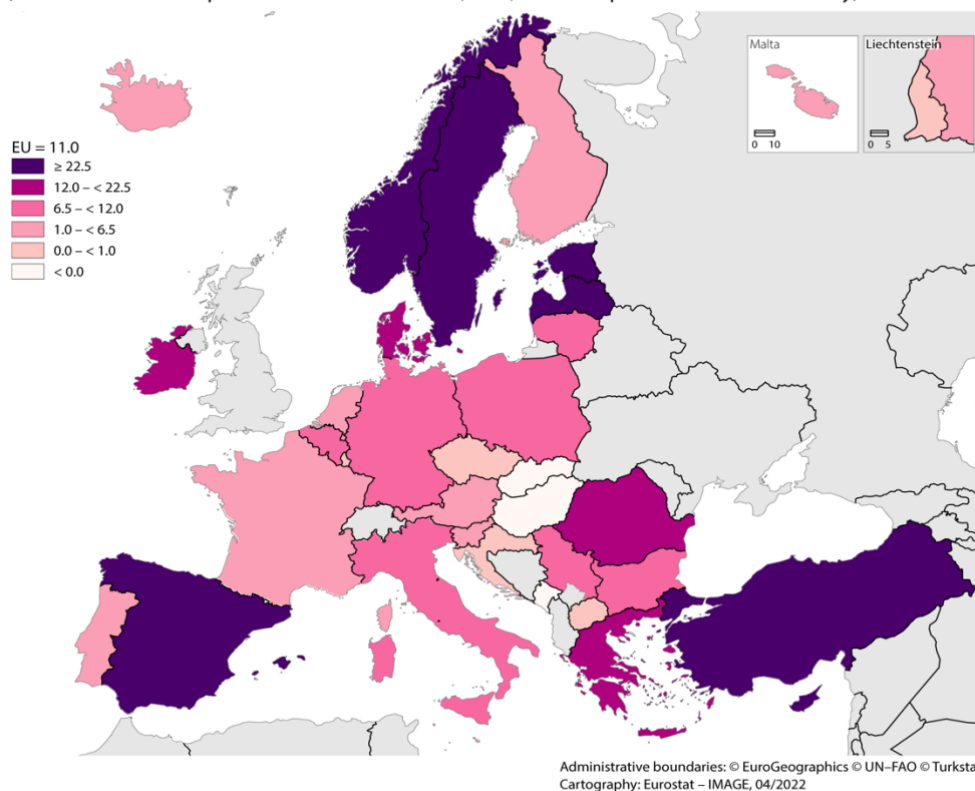
⁴⁹ Fernandez Alvarez, C., & Molnar, G. (2021). What is behind soaring energy prices and what happens next? – analysis. Retrieved from <https://www.iea.org/commentaries/what-is-behind-soaring-energy-prices-and-what-happens-next>

⁵⁰ EUSOTAT. (2022). Electricity and gas prices in the second half of 2021. Retrieved from <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220429-2>

HOW CAN UKRAINE-RUSSIA CONFLICT INFLUENCE THE ENERGY SECURITY OF THE EU?

Change in electricity prices for household consumers

(2nd half of 2021 compared with 2nd half of 2020, in %, based on prices in national currency)



ec.europa.eu/eurostat

With the beginning of the Russia-Ukraine war, the energy security issue has reoccurred as a heated debate within the EU members. Although the EU and other Western countries –such as the USA and Canada– imposed sanctions on Russia, energy sources were not targeted as much as possible.⁵¹ Paradoxically, the EU has increased its imports from Russia after the invasion.⁵² Such a development has readdressed the concept of energy security of the EU and led the EU to revise its energy policies. In this regard, the Commission published “REPowerEU: Joint European Action for more affordable, secure and sustainable energy” on 8 March, 2022 as a response and framework to decrease the EU’s dependence on Russian gas before 2030 and to effectively deal with the rising energy prices.⁵³

2.2. What are the Efforts for the Energy Union of the EU?

The concerns on the interruption of Russian gas accelerated the works for establishment of an EU Energy Union.⁵⁴ In this direction, the Commission took a step for the creation of an energy union on 25 February 2015.⁵⁵ According to the Commission, the creation of energy union is based on five related and mutually supporting dimensions that are the aim of enhancement of the EU’s energy security, creating an integrated internal energy market, increasing energy efficiency, decarbonization, and bolstering energy-related innovations and researches.^{56 57} In short and in other words, the energy

⁵¹ Mišić, M. (2022). The EU needs to improve its external energy security. *Energy Policy*, 165, Energy policy, 2022-06, Vol.165.

⁵² Zachmann, G., Sgaravatti, G., & McWilliams, B. (n.d.). European natural gas imports. Retrieved April 16, 2022, from <https://www.bruegel.org/publications/datasets/european-natural-gas-imports/>

⁵³ European Commission. (2022). REPowerEU: Joint European Action for more affordable, secure and sustainable energy. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A108%3AFIN>

⁵⁴ Stulberg, A. (2017). Natural gas and the Russia-Ukraine crisis: Strategic restraint and the emerging Europe-Eurasia gas network. *Energy Research & Social Science*, 24, 71-85.

⁵⁵ European Commission. (2015). Press corner. Retrieved from https://ec.europa.eu/commission/presscorner/detail/en/MEMO_15_6106

⁵⁶ Matsumoto, K., Doumpos, M., & Andriopoulos, K. (2018). Historical energy security performance in EU countries. *Renewable & Sustainable Energy Reviews*, 82, 1737-1748.

⁵⁷ European Commission. (2021, October 26). State of the Energy Union 2021: Renewables overtake fossil fuels as the EU’s main power source. Retrieved from https://ec.europa.eu/commission/presscorner/detail/en/ip_21_5554

HOW CAN UKRAINE-RUSSIA CONFLICT INFLUENCE THE ENERGY SECURITY OF THE EU?

union requires “secure, competitive, and sustainable energy in the EU and set ambitious goals for the deployment of renewables”.⁵⁸

The actions of the EU for the establishment of the energy union emphasize the need for meeting the EU’s 2030 energy and climate aims and the importance of collaboration of the member countries of the EU and the European Commission to achieve the goals determined by the Commission.⁵⁹ Implementing strategies and measures that can ensure the fulfillment of objectives of the energy union, particularly the EU’s 2030 targets on energy and climate issues, are prioritized by the Commission.⁶⁰ Especially, in this regard, consistency with the Paris Agreement is paid attention when implementing policies.

Efforts for increasing predictability and long-term certainty for investors across the EU and promoting social relations and solidarity are important for the notion of the consolidation of the Energy Union of the EU.⁶¹ The Commission encourages cooperation between the member states. It also strives to provide consistent reporting between the EU and its member states in accordance with the United Nations Framework Convention on Climate Change and the Paris Agreement because in order for the Commission to achieve its targets for the energy union, governance mechanism on the unification process in terms of climate and energy issues should be grounded on cooperation and “integrated reporting, monitoring, and data publication”.⁶²

However, there are substantial differences in the speed and motivation in terms of pursuing energy transition strategies of the EU between member states.⁶³ These differences affect national energy security and policy strategies of each member. Due to variation in these strategies, the priorities of the member states differ from each other. For example, while some member states, such as Germany and Denmark, strongly support renewable resources, some member states, such as Hungary and Romania, lack necessary expertise, fiscal resources, and suitable conditions.⁶⁴ This situation requires member states to find a common position and solution.⁶⁵

Divergence in the energy paths of the member states pose a threat to undermine the efforts for the establishment of the energy union. In addition to this divergence, what makes the issue more politically sensitive is that these different paths of member states lie along a ‘West-East axis’ in the sense that while Western European countries put more effort to integrate the renewables, some Eastern European countries (i.e. Poland and Romania) do not strive for the adaptation of renewables as much as the Western European countries of the EU does.⁶⁶

The Russia-Ukraine war accelerated efforts for the energy union within the EU because the EU’s dependence on Russia fossil fuels and the rise of energy prices led the EU members to cooperate and respond to this situation collectively. In this regard, for the energy union, the Commission proposes the acceleration of renewable energy projects and underlines the need to overcome administrative obstacles.⁶⁷ The idea of energy union was regarded as an umbrella scheme comprising all sides of “energy and climate mitigation policies” in the sense that it provides the member states with an incentive for decarbonization through integrating renewables and an opportunity to have an energy unification to break the dependence on Russia through the diversification of energy supply channels.⁶⁸

⁵⁸ Mata Pérez, M., Scholten, D., & Smith Stegen, K. (2019). The multi-speed energy transition in Europe: Opportunities and challenges for EU energy security. *Energy Strategy Reviews*, 26, 100415.

⁵⁹ European Commission. (n.d.). Energy Union. Retrieved from https://energy.ec.europa.eu/topics/energy-strategy/energy-union_en

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ Mata Pérez, M., Scholten, D., & Smith Stegen, K. (2019). The multi-speed energy transition in Europe: Opportunities and challenges for EU energy security. *Energy Strategy Reviews*, 26, 100415.

⁶⁴ Ibid

⁶⁵ Demski, C., Poortinga, W., Whitmarsh, L., Bohm, G., Fisher, S., Steg, L., . . . Pohjolainen, P. (2018). National context is a key determinant of energy security concerns across Europe. *Nature Energy*, 3(10), 882-888.

⁶⁶ Mata Pérez, M., Scholten, D., & Smith Stegen, K. (2019). The multi-speed energy transition in Europe: Opportunities and challenges for EU energy security. *Energy Strategy Reviews*, 26, 100415.

⁶⁷ European Commission. (2022). REPowerEU: Joint European Action for more affordable, secure and sustainable energy. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A108%3AFIN>

⁶⁸ Mata Pérez, M., Scholten, D., & Smith Stegen, K. (2019). The multi-speed energy transition in Europe: Opportunities and challenges for EU energy security. *Energy Strategy Reviews*, 26, 100415.

HOW CAN UKRAINE-RUSSIA CONFLICT INFLUENCE THE ENERGY SECURITY OF THE EU?

Halting the construction and certification of ‘controversial’ Nord Stream 2 pipeline project by Germany can be considered an attempt for the acceleration and intensification of efforts for the establishment of the Energy Union of the EU.^{69 70}

Although Russia is a threat for the energy security of the EU, the dependency of the EU on Russia in terms of meeting its energy needs indicates the deepness of the energy-related ties between two actors. Additionally, the existence of divergence in the energy preferences of member states and dependency on fossil fuels make the issue more complicated. In this sense, the EU should adopt energy strategies accordingly to be able to overcome these problems to ensure its energy security and create an energy union.

3. Policy Recommendations

3.1. Proposition 1. Adaptation of Renewable and Sustainable Resources

Use of renewable and sustainable sources have been indicated as one of the reference points of the European Commission and as a crucial component for the mitigation and adaptation strategies for climate change. However, it is evident that the use of renewable and sustainable sources is not addressed very often to be able to increase the energy security of the EU. Especially, although the EU has had unstable energy-related relations with Russia since 2006, necessary focus on renewables as an alternative source to natural gas was not given.

Increasing the share of renewable and sustainable sources can help the EU break its dependency on fossil fuel sources and specifically, on Russian gas. Integration of these sources into heating, industrial process, transporting sectors have an important role for the replacement of fossil fuels. This replacement ensures not only decarbonization within Europe but also strengthening the energy security of Europe.

Accelerating energy efficiency improvements through supporting research and development projects by the EU is required and should be encouraged. For example, new wind and solar projects can be deployed and incentivized by the Union. The potential of hydrogen seems promising as a clean energy carrier. It can also be produced through water electrolysis with low carbon. It can store tremendous amount of energy. Although it is not an energy source, if it is integrated into existing has infrastructures, the EU can benefit from natural gas much more effectively, increase its energy security, and lower carbon emissions.

As green energy transition will require huge amount of fiscal resources, carrying out the green transition should be in affordable and sustainable manner for the whole member states of the EU. Otherwise, it can not happen at all. Therefore, planning, construction, and operation activities for the production of renewable and sustainable sources should be simplified, shortened, and made available for any member state because this issue seems the most challenging part for the creation of the energy union.

3.2. Proposition 2. Diversify Supply Channels

Diversification of supply channels is one of the main components of ensuring energy security. The EU imports 90% of its natural gas consumption and Russia provides more than 40% of the EU’s total gas needs. This fact demonstrates that the EU is dependent on Russia in terms of natural gas resources. In this respect, any interruption stemming from any dispute with Russia or transit countries proves that the EU needs for alternating supply routes.

⁶⁹ Weise, Z. (2022, February 22). Germany shelves Nord Stream 2 pipeline. Retrieved from <https://www.politico.eu/article/germany-to-stop-nord-stream-2/>

⁷⁰ Elyatt, H. (2022, February 23). Germany halts approval of Gas Pipeline Nord Stream 2 after Russia's actions. Retrieved from <https://www.cnn.com/2022/02/22/germany-halts-certification-of-nord-stream-2-amid-russia-ukraine-crisis.html>

HOW CAN UKRAINE-RUSSIA CONFLICT INFLUENCE THE ENERGY SECURITY OF THE EU?

Firstly, EU member states should unite under the EU umbrella in the energy issue to break the dependency on Russia. Divergence in the interests of member states should be minimized to achieve the purpose. In this regard, not signing any new gas supply contracts with Russia can enable member states to increase their efforts and wishes to look for new supply channels.

The extension of existing natural gas pipeline projects (i.e. the Southern Gas Corridor) and the new natural gas agreements with Central Asian states (i.e. Turkmenistan), Caspian states (i.e. Azerbaijan), Eastern Mediterranean states (i.e. the Republic of Cyprus, Turkey, Greece, and Israel) can decrease the threats of Russia on the energy security of the EU. In addition, if it is possible, signing long term supply contracts with different gas exporting states can secure the supply of natural gas.

Increasing LNG supplies to the EU and the import capacity of the EU is also another option for strengthening the energy security of the EU and the improvement of competitiveness in energy prices. Since there are more than several source options to supply LNG to the Union, LNG is an opportunity to diversify supply channels. Additionally, because LNG has environmental advantage in terms of emitting almost 90% less SO_x and 80% less NO_x emissions, LNG resources should be made as much attractive as possible for energy-related actors (i.e. companies and governments) not only to contribute to green transition but also to increase energy security. In this regards, in order to encourage European companies to support LNG activities, they should be financed for the construction of new LNG terminals.

3.3. Proposition 3. Use of Nuclear Power

Nuclear is “the second-largest low-carbon power source in the world” and it is actively used mainly for the generation of electricity and hydropower.⁷¹ Although the European Commission encourages member states to use nuclear power with the regular implementation of ‘stress tests’ for safety and risk assessment, both neighbouring states and EU member states are not much willing to benefit from nuclear power because of the risks of it and past bad experiences (i.e. Fukushima nuclear accident and Chernobyl nuclear disaster).

Nuclear energy capital cost is high due to construction, licensing, and commissioning processes but after these stages are completed, it operates with low fuel and maintenance prices. Especially, with the efforts for shifting to low-carbon energy sources as an alternative energy sources to fossil fuel sources, nuclear power should be considered an opportunity for states to consolidate its energy security. In this regard, the EU should, firstly, focus on how to extend the operational lifetime of existing nuclear plants through innovations on cost control and on efficiency and sustainability in operations. Then, the EU can begin building new plants with primarily large water reactors for in any case of any hazardous problem.

Nuclear power is about to be more common than ever. That’s why in order to minimize risks and be global leader in innovative nuclear technologies, the EU should invest more on the nuclear power through research & development projects. Through technological transformation, the EU should strive more for the gradually replacement of big old nuclear power plants with cheaper and safer ones.

In addition, the creation of national nuclear regulatory authorities for each EU member states should be encouraged by the EU. This kind of agency can increase public confidence towards nuclear power and bolster the effectiveness of the management of nuclear power plants. In this sense, increasing transparency in coping with public should be regarded as a complementary means of success by the EU to increase its energy security.

⁷¹ International Energy Agency. (2019). Steep decline in nuclear power would threaten energy security and climate goals - news. Retrieved from <https://www.iea.org/news/steep-decline-in-nuclear-power-would-threaten-energy-security-and-climate-goals>

4. Conclusion

This paper highlighted the energy security dimensions for the EU and explained how the Russian invasion of Ukraine can change the EU's energy options. Although the effort and desire of the EU for the transition and diversification of energy sources are evident, improvements and new steps are required to break the dependency on Russia in terms of meeting energy needs. In this regard, the paper should be seen as a call for the transition and diversification of energy sources of the EU.

In the paper, three policy recommendations are addressed. These recommendations wish to alternate energy channels and focus more on research & development projects for the EU to consolidated its energy security. In that respect, the EU should strive to improve and accelerate green transition process and should engage in signing new agreements with different energy actors not to face energy interruptions and unexpected rising prices.

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