



**Russia-Ukraine Crisis and Energy Insecurity: Is energy transition a sustainable alternate?**

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**ABSTRACT**

*Phenomena like globalization and interdependence shape the contemporary world. The outbreak of Russia-Ukraine crisis instigated a wave of alarm amongst the global leaders due to a high risk of the war's potential consequences on the entire world. As the crisis intensified, it started taking economic, political and energy domains under its spur. On one hand, west imposed sanctions on Russian economic and energy firms, i.e., Gazprom. Being an energy giant, Russia utilized its energy resources as a tool to respond to the western sanctions. Nord Stream I and Nord Stream II pipelines were shut down. Hence, triggering an energy crisis in states like UK, Germany, France etc. Coupled with harsh winter, hike in energy bills and food prices etc. has had both social and economic ramifications. To curb this energy security dilemma, European states have undertaken several steps including signing deals with countries like Norway, Azerbaijan and Qatar. Energy transition is yet another option at the table for EU member states to consider to deal with this crisis. This research paper will discuss the significance of Russian energy resources, the European energy crisis that has been instigated as a result of Russia-Ukraine conflict, the implications of this crisis, attempts of European countries to deal with it. This paper will also highlight the phenomena of energy transition and whether it can serve as a sustainable and self-reliant substitute for Russian energy resources or not.*

**Keywords:** Russia-Ukraine Crisis, Energy Crisis, Energy Security, Europe, Energy Resources.

## Introduction

The contemporary international relations are shaped by a globalization, cooperation and interdependence amongst the state actors. This interdependence was enhanced in the post-WWII era, when states began emphasizing on cooperation and mutual dependency as a source of avoiding conflict. Any happening in one corner of the world impacts other parts of the world (directly or indirectly). However, the outbreak of the 2008 economic recession, covid-19 pandemic and Russia-Ukraine war highlighted the increased vulnerability of the international system under globalization. Responding to the sanctions by the west, Russia cut off substantial amount of gas supplies to the European Union member states. EU, that relies heavily on Russian energy resources to meet its domestic demands, faced an adverse crisis of energy insecurity. The Russian actions were widely condemned by the international community. However, with approaching winters, it was crucial for EU member states to finalize alternate sources of energy supply.

Ensuring energy security is vital to sustain businesses, industries and households. The developed and developing world relies immensely on traditional energy resources to meet their energy needs. States take under consideration both long-term and short-term plans to guarantee energy security. For European Union states, the Russian gas accounts for more than 40% of their energy supply. To tackle this predicament, EU members began formulating plans like 15% energy cuts, REPowerEU, and signing deals with other states such as Azerbaijan, Qatar, Norway and US. However, amidst all these attempts to overcome energy insecurity, energy transition to renewable energy sources has emerged as a major way of Europe to attain self-sufficiency and guarantee its energy security.<sup>1</sup> This paper will discuss the significance of Russian energy resources, the European energy crisis that has been instigated as a result of Russia-Ukraine conflict, the implications of this crisis, attempts of European countries to deal with it. It will shed light on the phenomena of energy transition and whether it can serve as a sustainable and self-reliant substitute for Russian energy resources or not.

## Energy Security and Insecurity

Over the past couple of decades, energy security has gained immense prominence in international relations. This is due to its significant role in the economic, social and health

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<sup>1</sup> Marco Siddi, "EU-Russia Energy Relations," 2020, [https://www.researchgate.net/publication/340129067\\_EU-Russia\\_Energy\\_Relations](https://www.researchgate.net/publication/340129067_EU-Russia_Energy_Relations).

domains. Currently, cheaper energy sources hold immense significance for developed and developing economies which require unhindered supply of these sources to cater their economic and social needs. Globalization and energy security go hand in hand. From one perspective, the need of the states to become energy secure has fueled globalization and interdependence. On the contrary, globalization has further added to energy security's importance and energy vulnerability. In the contemporary times, any happening in one part of the world impacts the rest of the world as well. Where on one hand, countries are being benefitted by the trade of energy resources, there is also a prevalent threat of crisis adversely impacting this interdependence. Such patterns are being observed in the Russia-Ukraine conflict currently. In simplest terms, energy security can be defined as, "the continuous availability of energy in varied forms, in sufficient quantities, at reasonable prices."<sup>2</sup>

International Atomic Energy Agency, IAEA has defined energy security as, "uninterrupted availability of energy sources at an affordable price."<sup>3</sup>



Figure 1: the four As of energy security<sup>4</sup>

The availability of energy refers to the presence of enough amounts of resources to meet the energy requirements. In the contemporary times, oil is one of the major energy resources. United States, China, India and many European states like Germany, France, UK etc. are

<sup>2</sup> Diana Hernández, "Understanding 'Energy Insecurity' and Why It Matters to Health.," *Social Science & Medicine*, 2016, <https://www.semanticscholar.org/paper/Understanding-%27energy-insecurity%27-and-why-it-to-Hern%C3%A1ndez/23a95711d0537b4bac9b9f8d3fbd8e3d728c68c2>.

<sup>3</sup> International Energy Agency, "Energy Security - Areas of Work," IEA, December 2, 2019, <https://www.iea.org/areas-of-work/ensuring-energy-security>.

<sup>4</sup> "Energy Security: Definition and Importance," SafetyCulture, 2022, <https://safetyculture.com/topics/energy-security/>.

heavily reliant on oil imports to satisfy their local energy demands. However, in the long term, the increased reliance on oil consumption will be insufficient to sustain the global energy demands. There is a probability of a potential global crisis due to oil shortage. Therefore, ensuring the availability of alternative energy sources is essential to sustaining global consumption.

Accessibility of energy relates to the ability of states to access the energy resources. Domestically, it concerns the availability of technology and monetary sources to extract them. While internationally, it refers to the capacity to buy these sources from other countries.

Acceptability of energy concerns the realization of adverse impacts of energy resources usage on the environment and formulation of sustainable policies to combat them.

Affordability of energy in simple terms is the ability to afford the expenses relating to energy resources extraction and purchase. This component emphasizes on the financial stability of a state. Due to extreme volatility of the energy resource market, oil prices are prone to fluctuating. If the state is stable enough to keep up with the market price fluctuations, it means that it is energy secure.<sup>5</sup>

Traditionally, the notion of energy security was associated with the adequate supply of energy. However, it has been outdated. Now, the concept of energy security is viewed as synonymous to resilience. That means responding to the emerging threats efficiently to prevent energy outages. Hence, being energy secure relates to the unhindered supply of energy at an affordable price and a backup plan to compensate in case of any crisis. Ensuring energy security requires highly-efficient risk management, diversification of energy resources, being incapable of guaranteeing a smooth supply of energy at an affordable price and not having a backup plan to deal with the energy crisis can be termed as “energy insecurity”. Generally, this notion is associated with the economic sector. Analysts tend to neglect the additional factors that add up to the energy burden such as domestic fuel consumption and household usage.<sup>6</sup> Energy security has two aspects:

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<sup>5</sup> Aleh Cherp, “The Concept of Energy Security: Beyond the Four As,” 2014, [https://www.researchgate.net/publication/267634608\\_The\\_concept\\_of\\_energy\\_security\\_Beyond\\_the\\_four\\_As](https://www.researchgate.net/publication/267634608_The_concept_of_energy_security_Beyond_the_four_As).

<sup>6</sup> Hisham Khatib, “CHAPTER 4 Energy Security,” <https://www.undp.org/sites/g/files/zskgke326/files/publications/chapter4.pdf>.

- (1) Long-term energy security<sup>7</sup> refers to the timely investments for the supply of energy that are in coherence with the economic and environmental needs.
- (2) Short-term energy security relates to the capacity of an energy setup to respond efficiently to the abrupt variations in the balance of supply-demand.<sup>8</sup>

As per international relations analysts, since the energy resources are unevenly distributed around the world, there are several factors that impact energy security. These include: physical factors (geological makeup), production costs, technology and socio-political issues such as international conflicts etc. Any kind of disruption in the energy supply chain can result in energy insecurity amongst those countries that are heavily reliant on such resources to sustain their economic activities. Economically, energy insecurity can place immense burden on middle to low-income households. Per capita income and per capital energy consumption is always correlated. Moreover, it can also adversely impact the functioning of factories, markets etc. Hence, reducing domestic production. This ultimately results in a hike in prices of products of daily use. Thus, to be energy secure, it is crucial for the states to reduce their overall import of energy resources and adopt alternative, sustainable ways to meet the energy demands.<sup>9</sup>

## The Russia-Ukraine crisis

The year 2022 marked a significant turbulence in international relations due to the initiation of Russia-Ukraine war. Although relationships had been quite tense since 2014, things took turn for the worst with Russia beginning to launch military strikes on Ukraine and Kyiv responding militarily by the aid of EU and West. In response to the Western sanctions, Russia cut off energy supplies to the EU which triggered a massive energy crisis in Europe. But the adverse impacts surpass the energy domain and includes the economy, food security and refugee crisis as well.

There are several causes and events that resulted in the evolution of this conflict into what it is today. Historically, Ukraine was a part of the Soviet Union. Even after

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<sup>7</sup> Graciela Chichilnisky, "Energy Security, Economic Development and Global Warming: Addressing Short and Long Term Challenges," *International Journal of Green Economics*, January 1, 2009, [https://www.academia.edu/24624084/Energy\\_security\\_economic\\_development\\_and\\_global\\_warming\\_addressing\\_short\\_and\\_long\\_term\\_challenges](https://www.academia.edu/24624084/Energy_security_economic_development_and_global_warming_addressing_short_and_long_term_challenges).

<sup>8</sup> International Energy Agency, "Energy Security - Areas of Work," IEA, December 2, 2019, <https://www.iea.org/areas-of-work/ensuring-energy-security>.

<sup>9</sup> Tibisay Morgandi, "Energy Security in International Law," 2021, [https://www.researchgate.net/publication/350043021\\_Energy\\_Security\\_In\\_International\\_Law#:~:text=It%20is%20not%20always%20possible%20to%20clearly%20distinguish,both%20%28domestic%29%20demand%20and%20%28domestic%20and%20For%20international%29%20threats..](https://www.researchgate.net/publication/350043021_Energy_Security_In_International_Law#:~:text=It%20is%20not%20always%20possible%20to%20clearly%20distinguish,both%20%28domestic%29%20demand%20and%20%28domestic%20and%20For%20international%29%20threats..)

independence, Russia has considered Ukraine crucial for furthering its national agendas. Kremlin had geostrategic, geopolitical and geoeconomic interests behind this conflict. Geography-wise, Russia is the largest state in the world with a massive territory extending in the Euro-Asian region. The western part of Russia lies in Europe while the eastern part lies in Asia. The European Russia is quite developed but the Asian Russia is extremely underdeveloped due to harsh winters. Vladivostok is the only operational port in Russia which operates only for eight months and remains closed for the rest of the year due to extreme weather.<sup>10</sup>

From a geostrategic<sup>11</sup> lens, access to warm waters has remained a chief priority for Russia. Ukrainian port of Sevastopol would give Russia access to Asia, Africa and Middle East. For this reason, Russia invaded Ukraine in 2014 to get access to the sea port and warm waters. From a geoeconomic point of view, Sevastopol would give Russia access to the Black Sea, ultimately accessing Bosphorous Strait and Mediterranean Sea. This is crucial for expanding Russian trade and its sphere of influence in Europe, Asia, Africa and Middle East. Geopolitically, it is important to note that the former President of Ukraine had prosperous relations with Russia. But simultaneously, Yanukovich wanted Ukraine to join EU as well. Joining EU would've meant that Ukraine would join NATO as well. This was viewed as a threat by Kremlin which saw its sovereignty and influence being intimidated. Under the Article 5 of NATO, Ukraine would've attained a position to be protected by NATO states in times of a military conflict<sup>12</sup>. Moreover, NATO expansion till the borders of Russia would've severely hampered Russian geostrategic and geoeconomic interests.<sup>13</sup>

### Globalization and enhanced vulnerability

In the simplest terms, globalization refers to the regular interaction amongst states, and non-state actors such as multi-national corporations, inter-governmental organizations, terrorist groups and so on. The phrase “nations without borders” aptly explains the concept of globalization. This phenomenon is driven by global trade, international investment, and development of information technology. Globalization has close proximity with capitalism,

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<sup>10</sup> Bartosz Gierczak, “The Russo-Ukrainian Conflict,” 2020, [https://www.researchgate.net/publication/349948624\\_The\\_Russo-Ukrainian\\_Conflict](https://www.researchgate.net/publication/349948624_The_Russo-Ukrainian_Conflict).

<sup>11</sup> Hanna Shelest and David Batashvili, “Ukraine. Russia’s Geostrategic Activities in Eastern Europe,” *Russia’s Geostrategic Activities in Eastern Europe*, January 1, 2020, [https://www.academia.edu/44490991/Ukraine\\_Russias\\_Geostrategic\\_Activities\\_in\\_Eastern\\_Europe](https://www.academia.edu/44490991/Ukraine_Russias_Geostrategic_Activities_in_Eastern_Europe).

<sup>12</sup> Dharmendra M. Shahi, “War in Ukraine: A Geopolitical Analysis,” 2022, [https://www.researchgate.net/publication/361098792\\_War\\_in\\_Ukraine\\_A\\_Geopolitical\\_Analysis](https://www.researchgate.net/publication/361098792_War_in_Ukraine_A_Geopolitical_Analysis).

<sup>13</sup> David McLellan, “Globalization in the 21st Century,” *Theoria: A Journal of Social and Political Theory*, no. 106 (2005): 119–27, <https://www.jstor.org/stable/41803819>.

economic liberalism and democracy. It gained much prominence in the post-WWII era. This was the time when states began adopting complimentary policies to recover the economic loss of war and stabilize their economic situation. Hence, international financial institutions like IMF, WTO, and World Bank came into existence. Moreover, states started adopting policies that would increase their integration in the international economic system. One significant example is China that adopted combination policy, moved out of isolationism and opened itself to global trade.<sup>14</sup>

But everything comes with pros and cons. Where on one hand, globalization has facilitated economic growth, increased cooperation and progress. On the other, it has accentuated the vulnerability of the international system. Any happening in one part of the world has impacts on the entire world. In terms of Russia-Ukraine relations, globalization resulted in economic and energy cooperation and interdependence between Russia and European states. This way, the states that lacked energy resources (Europe) were able to purchase it from the one who did possess these resources (Russia) in exchange of monetary benefits. But on the other hand, it led to a severe dependence of European states on Russian energy resources hence, adding to their vulnerability in times of any potential crisis. This is exactly what is being observed currently. After Russia cut off its energy resource supply, European states are struggling to satisfy their energy demands and seeking new avenues of oil and gas supply.<sup>15</sup> Skeptics like Marxists and realists view globalization to have failed. As per them, due to increased volatility, states are now shifting to deglobalized policies to attain self-reliance and sustainability. However, the globalist and liberal thinkers regard it impossible to deglobalize and emphasis that states are now discovering more sustainable avenues of cooperation and win-win dynamics such as renewable energy etc.

### **Significance of Russian energy resources for Europe**

Russia is naturally-gifted in terms of natural resources in its vast territory. There is an abundance of natural, particularly fossil fuel resources. The Russian state comprises of the world's largest known natural gas reserves (32% of the entire world), the second largest coal

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<sup>14</sup> Wiebe E. Bijker, "Globalization and Vulnerability: Challenges and Opportunities for SHOT around Its Fiftieth Anniversary," *Technology and Culture* 50, no. 3 (2009): 600–612, <https://www.jstor.org/stable/40345732>.

<sup>15</sup> Ionuț Alin Cîrdei, "(PDF) the Impact of Globalization on the Security Environment," ResearchGate, 2019, [https://www.researchgate.net/publication/334675841\\_The\\_Impact\\_of\\_Globalization\\_on\\_the\\_Security\\_Environment](https://www.researchgate.net/publication/334675841_The_Impact_of_Globalization_on_the_Security_Environment).

deposits (14% of the world as estimated) and eighth largest oil reserves (10% of the world).<sup>16</sup> This adds to Russia's global significance, hence attracting actors from all over the world to attain access to these resources. Due to this massive energy potential, the country relies heavily on the export of energy resources to sustain and grow the economy. The revenue generated from this domain is responsible for forty percent of the Russian budget and constitutes fourteen percent of its economic output. Here, an important point to be noted is that majority of Russia's oil and gas exports are with the European nations. These states rely on industrialization to run the economy. Due to the lack of enough indigenous fossil fuel resources, the import majority of the energy resources from Russia. As per many estimates, Russian natural gas fulfills approximately forty-three percent of Western Europe's energy demand. Moreover, states like Herzegovina and Bosnia were 100% reliant on Russia to meet their energy demand.

In addition to natural gas, Russia's oil exports also play a significant part in this regard. Russia has the world's largest network of oil pipelines that extends till Eastern, Central and Western Europe. As of 2021, Russian oil accounted for 10% of the Europe's total demand. Amongst the European states, the EU member states are the most reliant on Russian energy resources. Specifically, Germany who derives more than fifty percent of its natural gas and 30% of its crude oil supplies from Russia. Coal is also an important import by EU states from Russia. The Ukrainian President Volodymyr Zelenskyy has termed the Nord Stream II pipeline as "a dangerous geopolitical weapon."<sup>17</sup>

### **Energy as a maneuvering tool**

Whenever any country has comparative advantage of the specific natural resource over others, it uses that resource efficiently to attain its national agendas. The significance of energy security in international relations can be estimated from the fact that it provides energy secure states with the capability to maneuver those who are energy insecure. Russia is one of the major oil and gas producers in the world. While the EU states, rely heavily on Russia's energy resources to meet their energy demands. Nord Stream I, Nord Stream II<sup>18</sup>, Blue Stream are the major Russian pipelines that supply natural gas from Russia to Europe. It

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<sup>16</sup> Marco Siddi, "EU-Russia Energy Relations," 2020,

[https://www.researchgate.net/publication/340129067\\_EU-Russia\\_Energy\\_Relations](https://www.researchgate.net/publication/340129067_EU-Russia_Energy_Relations).

<sup>17</sup> "Nord Stream 2 'Dangerous Geopolitical Weapon': Zelensky," France 24, August 22, 2021,

<https://www.france24.com/en/live-news/20210822-nord-stream-2-dangerous-geopolitical-weapon-zelensky>.

<sup>18</sup> Balázs Sziklai, "The Geopolitical Impact of Nord Stream 2," 2019,

[https://www.researchgate.net/publication/332205830\\_The\\_Geopolitical\\_Impact\\_of\\_Nord\\_Stream\\_2](https://www.researchgate.net/publication/332205830_The_Geopolitical_Impact_of_Nord_Stream_2).



is essential to highlight that these pipelines pass through Ukraine and Belarus to Europe. Critics have stressed that these pipelines are used by Russia to enhance Europe's dependency on it and also to expand its sphere of influence. After the outbreak of Russia Ukraine war, energy resources were securitized. This further added to their significance in the contemporary international relations. It is important to note that EU states get forty percent of their energy supply from Russia. Responding to the Western sanctions, Russia used it as a tool to maneuver circumstances in favor.<sup>19</sup>

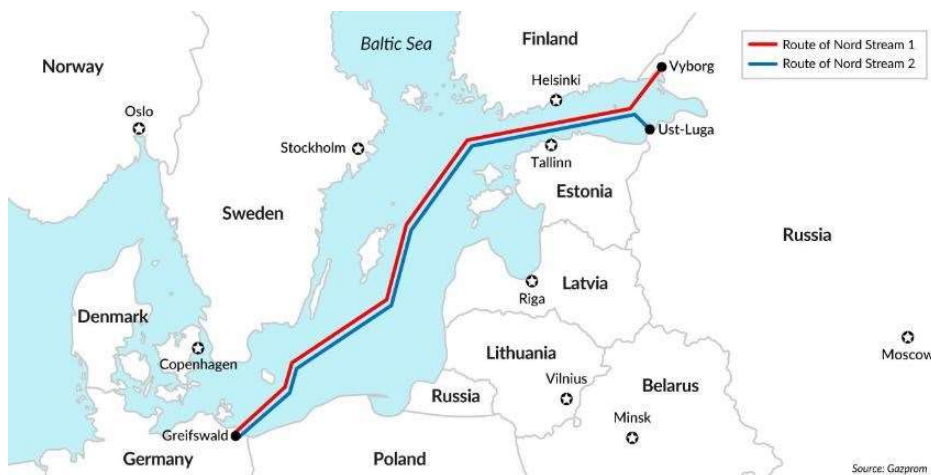


Figure 2: Energy Crisis in Europe<sup>20</sup>

The Russia-Ukraine crisis is the true demonstration of extreme interdependence that prevail in the contemporary international relations. If viewed from an optimistic lens, due to interdependence and interconnectedness, more than USD 12 million were gathered for donations and many states like Slovakia welcomed refugees to help the Ukrainians. However, it has many negative implications as well. Due to globalization and interdependence, the war triggered an intense energy crisis in Europe. Previously, the European countries had already been suffering from covid-induced economic, energy, political and social crisis. The Russia-Ukraine war further aggravated it. And hence, things took turn for the worse. Responding to Russian invasion of Ukraine, the US and EU allies, imposed sanctions on Russia. Sanctions on energy resources included banning all sorts of oil and gas imports from Russia, severing the opening of Nord Stream II pipeline, to impose price caps on oil and gas imports from

<sup>19</sup> Borut Grgic, "Russian Energy Strategy: Risk Assessment for Europe," *Insight Turkey* 8, no. 1 (2006): 149–55, <https://www.jstor.org/stable/26328570#:~:text=In%20an%20effort%20to%20contain%20European%20political%20influence.>

<sup>20</sup> IBTimes News, "Austria Sees 'No Link' between Navalny and Nord Stream," *International Business Times AU*, September 16, 2020, <https://www.ibtimes.com.au/austria-sees-no-link-between-navalny-nord-stream-1617448>.

Russia etc. However, due to immense dependency on Russian natural gas, EU states didn't impose sanctions on gas imports from Russia.

Moreover, in terms of sanctions targeting individuals, UK stopped selling golden visas to Russians. United Kingdom, United States, the European Union and Canada froze Russian President Putin's and Foreign Minister Lavrov's assets. More than a thousand Russian individuals and businesses were sanctioned by the West. In addition to this, many international enterprises severed their trade with Russia. EU states, US, Canada and UK took the most severe steps. They imposed ban on the exports of dual-use goods to Russia, ban on import of Russian luxury goods and gold was also imposed, all Russian flights were banned in their airspace. UK additionally imposed a 35% import tax on some Russian products that involved vodka as well. These sanctions had adverse impacts on Russia's economy like annual inflation reaching 17.1% and GDP falling by 8-9%.<sup>21</sup>

Russia responded to these sanctions by imposing ban on the exports of approximately two hundred products. These goods were relating to telecommunication, medicine, wood, agricultural and electronics. However, the major setback imposed on the European nations was by Russia's halt in the gas and oil supply. In September, 2022, the Nord Stream I pipeline was shut down due to some technical faults. This, coupled with the severing of Nord Stream II pipeline construction triggered an adverse energy crisis in Europe. Although Russia justified halting supplies due to leakage in the pipeline, the European leaders and US declared it a "deliberate action" by Russia. Referring to this crisis, the US Secretary of the State, Antony Blinken stated that Russia's decision to cut off supplies from Nord Stream I was "further evidence that it is so vital strategically for Europe to move away from its dependence on Russian energy because Putin has shown repeatedly that he will use it as a weapon."<sup>22</sup>

### **Impacts of energy crisis in Europe**

This energy crisis resulted in adverse social, political and economic impacts. All these effects are interlinked. Initially, the cutting off of energy supplies resulted in domestic shortage and price hike. It is crucial to note here that majority of the EU's industries rely on oil and gas to operate. Considering the volatility of prices, lack of supplies, economic

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<sup>21</sup> BBC News, "Ukraine: What Sanctions Are Being Imposed on Russia?," *BBC News*, September 30, 2022, sec. Europe, <https://www.bbc.com/news/world-europe-60125659>.

<sup>22</sup> "Does the Nord Stream 1 Shutdown Show Europe Can't Survive the Winter without Russia Gas Exports?," *Euronews*, 2022, <https://www.euronews.com/next/2022/07/25/does-the-nord-stream-1-shutdown-show-europe-cant-survive-the-winter-without-russia-gas-exp>.

vulnerability and security threats, the International Atomic Energy Agency declared this crisis as “the first truly global energy crisis, with impacts that will be felt for years to come.”<sup>23</sup>

Many countries, that were yet recovering from the impacts of covid-19 pandemic, had to bear the additional brunt of dealing with the energy crisis and its negative impacts. Considering the aggravated circumstances, it is evident that the fate of European energy crisis is reliant on the de-escalation of tensions amongst Russia and Ukraine and Europe finding access to new partners for energy import.<sup>24</sup> The impacts of this crisis are manifold. International Energy Agency has listed down the following major impacts of this crisis

## **Surge in energy prices**

As per the research by IEA, the hike in energy prices is the most evident impact of this crisis. Around seventy million people across the globe have now been deprived of the access to energy resources. Moreover, approximately hundred million people are resorting to biofuels as a mean to cook food. A trend towards reliance on renewable energy sources has also been observed.<sup>25</sup>

## **Supply scarcity and alternative trade routes**

Cutting off energy supplies by Russia has resulted in energy supply scarcity in Europe which relies on Russia for over forty percent of its energy demand. Resultantly, EU states had to experience immense difficulties due to cold weather, and heightened energy demand. To overcome this, EU member states are seeking for alternative supply routes from Middle Eastern states. However, Russia has managed to keep up its exports to the pre-conflict levels by forming energy trade deals with countries like China, Turkey, India and potentially Pakistan as well. All this has significantly altered the energy resource trade routes.

## **Economic consequences**

The impacts of this energy crisis on economies comprise of surge in the prices of products and services. Heightened energy, goods and services prices prompted companies to

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<sup>23</sup> “Russia’s War on Ukraine – Topics,” IEA, 2022, <https://www.iea.org/topics/russia-s-war-on-ukraine>.

<sup>24</sup> Julia Horowitz, “Europe Will Still Be Fighting an Energy Crisis in 2023 | CNN Business,” CNN, December 12, 2022, <https://edition.cnn.com/2022/12/12/energy/europe-energy-2023-iaa/index.html>.

<sup>25</sup> Peterson K. Ozili, “(PDF) Global Economic Consequence of Russian Invasion of Ukraine,” ResearchGate, 2022, [https://www.researchgate.net/publication/358977787\\_Global\\_economic\\_consequence\\_of\\_Russian\\_invasion\\_of\\_Ukraine](https://www.researchgate.net/publication/358977787_Global_economic_consequence_of_Russian_invasion_of_Ukraine).

cut off staff in order to survive the crisis. Large-scale job loss surged unemployment in the region, coupled with shutting down of many small and medium-scale businesses, food insecurity, hiked interest rates and inflation.<sup>26</sup>

## **Environmental impact**

As far as the impacts on climate change are concerned, it is quite unclear what the future would behold. But considering the trends, it is estimated that the European states are now transitioning to alternative renewable energy sources to overcome their energy insecurity. As per studies, this transition led to reduced GHG emissions by around one percent compared to 2021. There are increased concerns about the attainment of net-zero emissions by the year 2050.

## **Shifting reliance on renewables**

The IEA highlighted one significant impact of the Russia-Ukraine war-induced energy crisis is the transition towards renewable sources of energy production. This is remolding the energy sector. Indeed, this transformation will be a gradual process but it will reshape the energy domain forever. Renewable energy is not only sustainable but also cost-effective and an efficient way of meeting the energy requirements.

## **Effects on Politics**

On political level, many European governments are struggling to manage the crisis. The recent political turmoil in UK, following the resignation of Liz Truss after only spending a few days in the government is the evidence of this. Moreover, the current government of Rishi Sunak is also confronted with the descending economy, heightened inflation, energy crisis and surging unemployment and poverty. On the wider international relations perspective, it has enabled cooperation between European states. This is by encouraging them to collectively deal with the crisis, formulation of new diplomatic and economic relations with Arab and Middle Eastern states etc.

Considering these massive changes induced by the Russia-Ukraine war, the IEA noted, “many of the contours of this new world are not yet fully defined, but there is no going back to the way things were.”<sup>27</sup>

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<sup>26</sup> Julia Horowitz, “Europe Will Still Be Fighting an Energy Crisis in 2023 | CNN Business,” CNN, December 12, 2022, <https://edition.cnn.com/2022/12/12/energy/europe-energy-2023-iea/index.html>.

## How is EU dealing with the crisis?

There are two critical ways in which EU is dealing with the challenge of energy insecurity. Domestically, it is emphasizing on enhancing renewable energy sources while internationally, it is focusing on developing relations with Middle Eastern and other European nations that can prove essential in supplying resources to mitigate the issue. The following is an overview of the attempts that European Union member states have undertaken to address the matters.

### REPowerEU

In the light of energy insecurity crisis induced by the Russia-Ukraine war, the European Union has introduced a holistic plan to “save energy, produce clean energy and diversifying its energy supplies.” Through this program, around 85% of the European citizens will be enabled to quit their reliance on the Russia gas, oil and coal. Emphasis will be placed upon seeking new avenues of energy supply as in clean energy and also new energy contracts with other states.<sup>28</sup>

### Gas reduction plan

Locally, each EU member state is working towards reducing their gas usage to overcome this dependency. The members agreed on reducing their gas consumption by over 15% till next summer. This gas reduction plan is considered as a significant step towards curbing the energy crisis. The plan is quite comprehensive in nature and involves public-private partnerships to ensure implementation. It includes voluntary fuel switching, limits on temperatures, and awareness campaigns on a broader scale. An EU official declared the plan as a clear sign to Putin that the European Union and its citizens were still standing undivided and strong despite Putin’s intention to divide them.<sup>29</sup>

### Gas deals with other states

After losing a crucial gas trade partner (Russia), EU began searching for alternative sources to overcome the predicament. For this, it consulted with states like US, Qatar and

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<sup>27</sup> “Ukraine War Likely to Accelerate Clean Energy Transition: IEA,” [www.aljazeera.com](https://www.aljazeera.com/news/2022/10/27/russia-ukraine-war-to-accelerate-transition-to-green-energy-ia), 2022, <https://www.aljazeera.com/news/2022/10/27/russia-ukraine-war-to-accelerate-transition-to-green-energy-ia>.

<sup>28</sup> EUROPEAN COMMISSION, “REPowerEU: A Plan to Rapidly Reduce Dependence on Russian Fossil Fuels and Fast Forward the Green Transition,” European Commission - European Commission, May 18, 2022, [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_3131](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131).

<sup>29</sup> Jorge Liboreiro, “All You Need to Know about the EU’s 15% Gas Reduction Plan,” [euronews](https://www.euronews.com/my-europe/2022/07/27/winter-is-coming-all-you-need-to-know-about-the-eus-15-gas-reduction-plan), July 27, 2022, <https://www.euronews.com/my-europe/2022/07/27/winter-is-coming-all-you-need-to-know-about-the-eus-15-gas-reduction-plan>.

Norway. On his visit to Brussels, this winter, President Joe Biden emphasized on the need of long-term deals to overcome both short and long-term crisis. As per his perspective, these long-term deals would guarantee unhampered supply of energy resources even in times of crisis hence, reducing vulnerability. As per the deal, US is to provide extra LNG to EU hence, compensating for about 10% of the Russian gas cuts. The ultimate agenda of the deal is to provide over fifty billion cubic meters of LNG to EU per annum. Moreover, EU has also negotiated a deal with Norway. Having immense gas potential amongst the western European nations, Norway can significantly assist EU in curbing the crisis. Being a member of EFTA and an ally of NATO, Norway has always had prosperous relations with the EU member states. Where Russia accounted for over 40% of EU's gas imports, Norway stood second in line with 20% on its part.<sup>30</sup> Norway vows to boost its natural gas production by over 8% in order to cater the needs of Europeans. Upon the matter, Andreas Erikson, who is serving as the "Secretary in Petroleum and Energy Ministry", Norway, asserted that "Norway is a reliable, trustworthy and long-term energy partner for Europe."<sup>31</sup>

In terms of short-term collaboration, Norway has agreed on producing and providing sufficient gas to assist EU in tackling with the shortage. However, in the long-term, both partners have agreed on discovering new avenues of energy cooperation and emphasizing on the renewable energy production particularly. Furthermore, EU has agreed on signing long-term gas supply deal with Qatar. Azerbaijan, another natural-gas giant has agreed on almost doubling its supply of natural gas to EU in the approaching years. From 8 billion cubic meters to 20 million cubic meters per year. Apart from these states, the EU is also collaborating with South Korea, Egypt, Turkey, Algeria and Japan etc. to sign gas supply deals.

Although these deals have helped EU in filling its gas supplier's basket and minimizing the energy crisis to a considerable extent, these deals are in no way a sustainable substitute of the Russian gas. Hence, in addition to signing gas deal, EU is also emphasizing on other sources of energy.

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<sup>30</sup> "Norway," energy.ec.europa.eu, 2022, [https://energy.ec.europa.eu/topics/international-cooperation/key-partner-countries-and-regions/norway\\_en](https://energy.ec.europa.eu/topics/international-cooperation/key-partner-countries-and-regions/norway_en).

<sup>31</sup> By Helen Regan CNN Hafsa Khalil, Jeevan Ravindran, Aditi Sangal, Adrienne Vogt, "Norway to Step up Cooperation with EU to Ensure Additional Gas Supplies," CNN, June 23, 2022, [https://edition.cnn.com/europe/live-news/russia-ukraine-war-news-06-23-22/h\\_aaf806494e33903aea9e1904ddd79f10](https://edition.cnn.com/europe/live-news/russia-ukraine-war-news-06-23-22/h_aaf806494e33903aea9e1904ddd79f10).

## **Energy transition- way towards a more sustainable and self-reliant world**

One significant point to be noted here is that EU is currently the leading the green transition and climate change reversal programs. The EU member states have already over-accomplished their targets of the year 2020 to lessen GHG emanations till twenty percent under levels of 1990. However, this is not where the work has ended. The leaders of EU acknowledge that the world's biggest buying and selling bloc should proceed to push the envelope so as to acquire the agendas associated in the Paris Agreement. Attaining “net-zero emissions” is also a major goal. The European Council has hence been devoted to the formidable intention of turning into the first climate- neutral region by the year 2050.<sup>32</sup>

But things took turn for the worse when Russia began its military offensive in Ukraine earlier this year. It was followed by tough Western sanctions on Russia. Putin responded by significantly cutting off the gas supply to Europe. The EU states, that rely heavily on the Russian gas, found it immensely hard to sustain the daily-life activities (business and household chores) without it. In addition to signing gas deals with other states, EU members are also seeking opportunities of energy transition. Basically, energy transition refers to the process of shifting from one mode of energy consumption to the other. Such as the industrial revolution marked a shift from reliance on biomass and wood to coal for energy purposes. Later on, petroleum, oil and gas replaced coal. Currently, the energy transition related to the shift from fossil fuels to low-carbon and renewable energy sources. Rapid climate change has facilitated the process of energy transition. States all around the world are now considering new sources of energy supply that are sustainable and environmentally-efficient.

It is even more important for EU states to take under consideration this energy transition as it is leading the climate initiatives and investment in renewable energy projects. Under the agenda of “European Green Deal”, EU states vowed to attain “net-zero” emissions, and holistic decarbonization. The main focus of the “Framework Strategy for a Resilient Energy Union” are five domains that include: “domestic energy market, energy security, decarbonization and research, energy security and innovation and competitiveness.”<sup>33</sup>

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<sup>32</sup> Marco Siddi, “(PDF) the European Green Deal: Assessing Its Current State and Future Implementation,” ResearchGate, 2020, [https://www.researchgate.net/publication/341701815\\_The\\_European\\_Green\\_Deal\\_Assessing\\_its\\_current\\_state\\_and\\_future\\_implementation](https://www.researchgate.net/publication/341701815_The_European_Green_Deal_Assessing_its_current_state_and_future_implementation).

<sup>33</sup> Frans Berkhout, “Understanding Energy Transitions,” 2012, [https://www.researchgate.net/publication/254771454\\_Understanding\\_Energy\\_Transitions](https://www.researchgate.net/publication/254771454_Understanding_Energy_Transitions).

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In the light of all the happenings, Germany paced up its projects of wind and solar energy production. As per sources, the wind and solar power is to meet approximately 80% of Germany's energy demand in the approaching decade. Germany, the largest gas consumer in Europe, pledged to accomplish 100% energy transition to renewable resources by the year 2035. C. Lindon, Germany's Finance Minister termed renewable energy resources as "the energy of freedom." France has also announced the construction of fourteen nuclear reactors that would help meeting the domestic energy demands and minimizing reliance on Russia energy sources. The International Energy Agency (IEA) predicted the doubling of nuclear power production between the years 2020 to 2050. Norway and EU have joined hands to reinforce "green cooperation." Norwegian companies are to provide expertise in the projects relating to wind and solar power to the European Union member states. Furthermore, in the case of UK, the erstwhile prime minister, Boris Johnson pledged on bringing about energy transition to renewable energy sources in the UK. By the year 2035, the United Kingdom aims at acquiring over 78% of its energy supply from renewable energy sources.<sup>34</sup>

Renewable resources have emerged as a new ray of hope in these critical times. In terms of sustainability, these resources are abundant and also climate friendly. The carbon print as a result of their usage is significantly low which is clearly a plus point for a region that leads climate sustainability initiatives. However, there are certain cons relating to them as well. The nuclear energy, although environmentally-friendly, is considered hazardous due to the chances of accident and wide-scale destruction they can cause. The European Union has been divided on opinions regarding the usage of nuclear energy. Moreover, in terms of financial expenditure, the renewable energy sources are costly and setting them up is quite time-consuming. In long-term results, they can be quite beneficial. Nevertheless, for fulfilling the immediate energy demands of EU, they are not the ideal option.<sup>35</sup>

## Conclusion

The onset of Russia-Ukraine crisis alarmed the entire world due to the deteriorating potential consequences it could've had on the entire world. The contemporary international system is dominated by the phenomena of globalization under which interdependency prevails. Due to this, any happening in one part of the world impacts other parts of the world as well. Globalization resulted in collaboration between states. Global trade facilitated the

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<sup>34</sup> Mark Thompson Business CNN, "Europe Sets 2027 Deadline to End Reliance on Russian Oil and Gas," CNN, 2022, <https://edition.cnn.com/2022/03/11/energy/europe-russia-energy-end-date/index.html>.

<sup>35</sup> John Perkis, "Changing Energy: The Transition to a Sustainable Future," 2017, [https://www.jstor.org/stable/10.1525/j.ctv1xxs66?turn\\_away=true](https://www.jstor.org/stable/10.1525/j.ctv1xxs66?turn_away=true).



states to sell products that they had to countries who lacked them. But simultaneously, it enhanced the vulnerability of the international system by making states increasingly dependent on one another. Such grave consequences are being observed currently. Russia is utilizing energy resources as a maneuvering tool against EU that is majorly reliant on Russian gas to meet their energy demands. This triggered energy insecurity amongst the EU states. Energy crisis further fueled economic instability, social turmoil, poverty, unemployment, hike in prices of products of daily use etc. To overcome this crisis and guarantee energy security, EU sought cooperation with other states like Norway, Qatar, US, Azerbaijan etc. Moreover, energy transition is also an important option on the table. European nations are now seeking to reduce dependency on foreign sources of energy and rely on domestic renewable energy sources. For this purpose, Germany, UK and France etc. have initiated programs to attain more than 80% of energy self-sufficiency in the 2030s. For satisfying short-term energy demand, the energy deals with other states are essential. But they cannot fully substitute for the Russian energy resources supply. In addition, it also contradicts EU's climate initiatives. Hence, for the long-term, domestic production of energy is also critical. Energy transition to renewable sources, in this scenario, is an ideal option to reduce dependency, mitigate impacts of climate change, accomplish EU's goal of "net-zero" emissions and carbon neutrality, enhance sustainability and ensure self-sufficiency.