

EU SANCTIONS ON RUSSIA AND THEIR IMPLICATIONS FOR INDIA

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INTRODUCTION

The Ukraine conflict, which broke out in February of 2022, has placed Europe squarely at the heart of the ensuing energy crisis. It has brought to light both the extent and the severity of the impact of the EU's disproportionate reliance on Russia for fossil fuels, Russia being the primary exporter of energy—Liquified Natural Gas (LNG), oil, and solid fossil fuels—to Europe.

International sanctions have been used by the United Nations Security Council (UNSC) under Article 41 of Chapter VII of the UN Charter, as an enforcement mechanism for states that does not necessitate the use of force.¹ Sanctions can take a number of forms in accordance with their goals, which might be economic and trade restrictions, or more particular goals such as arms sanctions, travel bans and commodity restrictions. They are focused on protecting

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1. United Nations Security Council, "Sanctions", at <https://www.un.org/securitycouncil/sanctions/information>. Accessed on September 23, 2022.

human rights, promoting non-proliferation, protecting the sovereign rights of states, as well as peacekeeping and peace-building efforts.² Economic sanctions are imposed on states by either other states or international organisations, mainly to restrict certain strategic decisions by belligerent states that go against international norms or order.

In a bid to limit Russia's ability to sustain the war on Ukraine, the international community in general and the EU in particular have imposed a wide array of sanctions on Russia, including sanctions against Russian coal, oil and gas. While these sanctions are widely considered a major trigger for the 2021-2022 global energy crisis, the supply chain disruptions caused during the COVID lockdown and a global economy which is yet to recover its pre-COVID robustness have also had an adverse effect on oil and gas trade internationally. The present interconnectivity of the world energy market and the increasing climate extremes and the attendant increased energy consumption have only served as further exacerbations to the energy situation.

In 2021, the EU imported around 155 billion cubic metres (bcm) of natural gas from Russia. For a region that is dependent on Russia for meeting almost 40 per cent of its total natural gas and crude oil consumption, the repercussions of the energy crisis have been severe. The sanctions have resulted in the rerouting of the energy trade and an urgent quest by states to find alternatives by which they might fill the energy gap and regain energy security. It has further required the states to adopt austerity measures to throttle domestic energy consumption. These measures have resulted in a surge in energy prices and also adversely impacted food security worldwide, particularly in economically vulnerable regions. This article examines the more prominent of the various strategies and alternative energy-production methods that Europe is undertaking. It argues that the establishment of a punitive system has negative effects on both Europe and Russia.

2. Ibid.

A WIDER LOOK INTO THE IMPACT OF SANCTIONS ON THE ENERGY SITUATION

As previously mentioned, Russia is top exporter of natural gas, oil and coal to EU countries³ and the second largest exporter of oil after Saudi Arabia. The European Commission recently imposed its sixth set of sanctions on Russia in reaction to its unilateral attacks on Ukraine.⁴ The sanctions were coordinated with like-minded partner states and were intended to impose economic pressure on Russia in order to limit its warfighting capability. While the entire array of sanctions has included both wide-ranging and targeted restrictive measures on trade and diplomatic relations, including products as diverse as crude oil, refined petroleum products, coal, Russian vodka and caviar, the sixth set of sanctions has specifically targeted the seaborne oil trade from Russia, as it constitutes the majority of crude oil imports of Europe. As a result of these sanctions, Russia's gas deliveries have been reduced by 60 per cent since June 2022.

These sanctions, in addition to a supply reduction from Gazprom, the Russian company which manages the Nord 1 pipeline, have together significantly interrupted the energy flow into the European continent. Gazprom has reduced the supply of LNG by a considerable amount to countries such as Bulgaria, Poland, Germany and Denmark, citing non-payment through the newer Ruble-based system and repair works in the pipeline system.⁵ This energy coercion by Russia has resulted in a spike in global prices, apart from food and price inflation. This was highlighted at the G20 Meet by the High Representative of the EU, Josep Borrell who argued that "the crisis is entirely caused by Russia's actions: it has invaded a breadbasket of

3. Stefan Ellerbeck, "What Progress is the EU Making on Ending its Reliance on Russian Energy?", *World Economic Forum*, June 29, 2022, at <https://www.weforum.org/agenda/2022/06/russia-eu-energy-imports/>. Accessed on September 24, 2022.

4. European Commission, EU Sanctions Map, at <https://sanctionsmap.eu/#/main/details/26/lists?search=%7B%22value%22:%22%22,%22searchType%22:%7B%7D%7D>. Accessed on September 24, 2022.

5. Stuart Elliott, "Russian Gas Supply Cuts 'Underscore' Importance of US-EU Action on Energy", *S&P Global Commodity Insights*, June 27, 2022, at <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/natural-gas/062722-russian-gas-supply-cuts-underscore-importance-of-us-eu-action-on-energy>. Accessed on September 24, 2022.

the world and it has turned the shipping lanes of the Black Sea into a war zone.”⁶

Notwithstanding the EU consternation with Russia, as certain countries in Central and Eastern Europe have a greater dependence on piped gas supply from Russia, imposing a total ban would be catastrophic to the European economy. As a result, a six-month buffer period has been placed on the import of Russian crude oil products, a necessary relaxation required for finding viable alternative sources of energy.

It is worthy of note that the EU actions required as a result of the imposition of sanctions are well in line with the larger EU strategy to reduce their dependence on Russian energy imports by two-thirds towards the end of this year,⁷ a milestone towards making Europe independent of fossil fuels by 2030, as per the REPowerEU plan.⁸

The realisation of alternative supply routes, diversification of energy sources and rerouting energy supply are initiatives that will take much time, coordination and cooperation to implement. In addition, alternative energy sources must overcome numerous hurdles and “diversify suppliers, redesign infrastructure, mitigate price increases, increase efficiency, promote renewable alternatives, and, above all, ensure that homes and factories remain powered without interruption.”⁹

EU INITIATIVES TOWARDS ALTERNATE ENERGY

As a result of the sanctions imposed on Russia, Europe has had to adopt many regulatory mechanisms and austerity measures to accommodate the deficit in energy supply. Initiatives like LNG

6. European Union External Action, “G20: Speech by High Representative/Vice-President Josep Borrell at the Session on ‘Addressing Food and Energy Security’ of the Foreign Ministers’ Meeting”, July 8, 2022, at https://www.eeas.europa.eu/eeas/g20-speech-high-representativevice-president-josep-borrell-session-%E2%80%98addressing-food-and-energy_en/. Accessed on September 25, 2022.

7. Stefan Ellerbeck, n. 3.

8. European Commission, “REPowerEU: Joint European Action for more Affordable, Secure and Sustainable Energy”, March 8, 2022, at https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511. Accessed on September 25, 2022.

9. Jorge Liboreiro, “Five Things to Know about the EU’s Big Plan to Become Independent from Russian Fossil Fuels”, *Euronews*, May 24, 2022, at <https://www.euronews.com/my-europe/2022/05/18/five-things-to-know-about-the-eu-s-big-plan-to-become-independent-from-russian-fossil-fuel>. Accessed on September 25, 2022.

diversification, renewable energy, diversification of pipelines, efficient heating, solar and wind energy are some of the major steps being taken.¹⁰ Energy-related austerity measures have been put in place across Europe to promote efficient usage of gas to combat hiking energy bills, which are likely to worsen as the winter approaches. The intense heat wave across Europe has only worsened the situation.

Within the EU, the stress has been on expanding the supply of energy and building new LNG terminals and interconnectors. The rise in LNG supply prices has led to a spike in inflation levels across the Eurozone. EU states are stockpiling LNG resources to prepare for the next winter in Europe, where gas is crucial in heating homes.¹¹ The International Energy Agency (IEA) came out with the “10-Point Plan to Reduce the European Union’s Reliance on Russian Natural Gas” which highlighted—not signing newer contracts with Russia; looking for newer suppliers; alternate sources of energy; and opting for low-emission, clean and efficient alternatives like nuclear energy and wind energy.¹² The adoption of energy efficiency measures was also suggested for homes and industries. These measures further comply with the EU Green Deal to reduce emissions in the future.

NON-RENEWABLE ENERGY ROUTES

As Europe has gradually initiated diversification of LNG gas and crude oil suppliers, it is also speeding up the development of alternative supply routes from the African continent and Central Asian region. Algeria is a major supplier of LNG to Europe, with substantial reserves. It supplies Italy and Spain through its undersea pipelines and has an LNG terminal. From there, natural gas could be

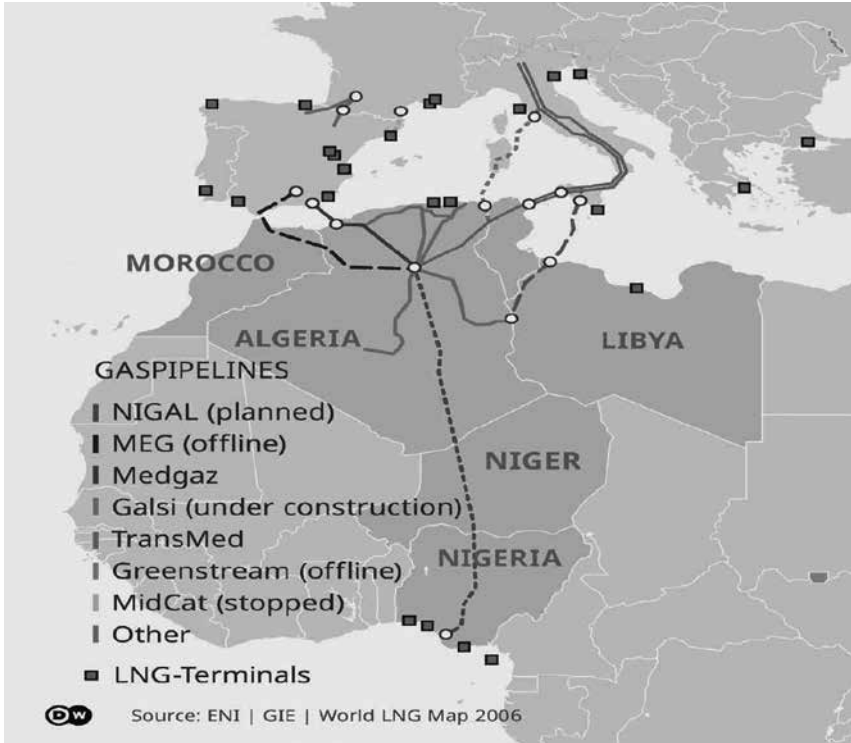
10. Elliot Smith, “Europe’s Plans to Replace Russian Gas are Deemed ‘Wildly Optimistic’—and could Hammer its Economy”, CNBC, June 29, 2022, at <https://www.cnbc.com/2022/06/29/europes-plans-to-replace-russian-gas-are-deemed-wildly-optimistic-and-could-hammer-its-economy.html>. Accessed on September 29, 2022.

11. Fatih Birol, “Coordinated Actions Across Europe are Essential to Prevent a Major Gas Crunch: Here are 5 Immediate Measures”, International Energy Agency, July 18, 2022, at <https://www.iea.org/commentaries/coordinated-actions-across-europe-are-essential-to-prevent-a-major-gas-crunch-here-are-5-immediate-measures>. Accessed on September 28, 2022.

12. IEA, “A 10-Point Plan to Reduce the European Union’s Reliance on Russian Natural Gas”, IEA, Fuel Report, March 2022, at <https://www.iea.org/reports/a-10-point-plan-to-reduce-the-european-unions-reliance-on-russian-natural-gas>. Accessed on September 28, 2022.

transported to Germany via pipelines. The Libyan gas field is another source of energy supply connected to Italy. There have been talks to develop the Eastern Mediterranean Pipeline Project to supply gas from offshore fields of Italy to Europe.¹³

Figure 1: Pipeline Network of Africa Connected to Europe



Source: Jennifer Holleis and Martina Schwikowski, “Europe looks to Africa to fill natural gas gap”, *Deutsche Welle*, March 4, 2022, at <https://www.dw.com/en/europe-looks-to-africa-to-fill-natural-gas-gap/a-61017873>. Accessed on September 25, 2022.

Figure 1 depicts the Africa-Europe pipeline network which is being developed. The major natural gas reserves, about 200 trillion

13. Vijaya Ramachandran, “Germany should Look to Africa for Gas, Not Russia”, *Foreign Policy*, March 11, 2022, at <https://foreignpolicy.com/2022/03/11/germany-putin-russia-gas-energy-africa-development/>. Accessed on September 25, 2022.

cubic-feet which make up approximately a third of Africa's reserves, lie in Nigeria, a very promising option for supplying gas to Europe.

The Trans-Saharan gas pipeline, which currently has the potential to supply around 30 billion cubic metres of gas from Nigeria, is "equivalent to about two-thirds of Germany's 2021 imports from Russia."¹⁴ A proposal has been made to join the existing LNG pipelines such as the "Trans-Mediterranean, Maghreb-Europe, Medgaz, and Galsi pipelines that supply Europe from transmission hubs on Algeria's Mediterranean coast."¹⁵ The Maghreb-Europe Gas Pipeline in Algeria "conveys natural gas through Morocco to Spain and Portugal, and the Medgaz pipeline links Algeria directly to Spain."¹⁶ However, the operationalisation of this Trans-Saharan Gas Pipelines (TSGP) is still in the initial stage and will be insufficient to address the European energy gap in the short run. This insufficiency in supply has led to a worldwide increase in the price of goods and greater delays in the production chain.

Beyond the TSGP, Europe also relies on shipping for LNG imports from West Africa. Yet, as in the case of Germany, it does not have any LNG import terminals. LNG loading ports with floating liquefaction plants could also be used to transport offshore gas to LNG tankers, as in the Greater Tortue Ahmeyim field. African states with huge gas reserves see this as an opportunity to widen the energy market to meet the deficit of around 150-190 billion cubic metres caused by Russian energy.¹⁷

Beyond developing a pipeline and the shipping infrastructure, it is also important to secure the energy supply from terrorist activities in the region, which leads to insecurity and instability in supply, as seen in the Cabo Delgado area of Mozambique. The importance of security of supplies was reiterated by the Economy Minister of Germany, Robert Habeck, who signalled the necessity to diversify

14. Jennifer Holleis and Martina Schwikowski, "Europe Looks to Africa to Fill Natural Gas Gap", *Deutsche Welle*, March 4, 2022, at <https://www.dw.com/en/europe-looks-to-africa-to-fill-natural-gas-gap/a-61017873>. Accessed on September 25, 2022.

15. Ibid.

16. Festus Iyora, "Analysis: Can African Gas Replace Russian Supplies to Europe?", *Al Jazeera*, March 1, 2022, at <https://www.aljazeera.com/economy/2022/3/1/analysis-can-african-gas-replace-russian-supplies-to-europe>. Accessed on September 26, 2022.

17. Ibid.

resources and has therefore delayed Germany's plan to go carbon neutral and is looking towards nuclear energy and coal to meet its demand shortage.¹⁸

An additional infrastructure solution initiated by the European Commission is the Southern Gas Corridor (SGC), which will connect the Caspian Basin to European markets. It is expected that the Corridor will open the European energy market and assist in the diversification of energy imports,¹⁹ supplying 10.5 bcm of gas in 2022 when at full capacity.²⁰ Similarly, other gas pipelines connecting Central Asia and the Mediterranean region include "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 by listing them on the PCI (Project of Common Interest) lists."²¹

GOING THE COAL WAY

Prior to the adoption of the EU Green Deal in 2020, coal was being used for energy generation on a wider scale in Europe, amounting to overall consumption of around 650 million tonnes in 2018.²² Steam coal, used in power generation and heating purposes, comprises 63 per cent of the imported bulk while coking coal, used in steel manufacturing plants, amounts to 27 per cent.²³ In a bid to cover the deficit in energy demands due to the spike in LNG prices and supply, states have increased their reliance on the import of coal for electricity generation across Europe. This is evident from the fact that in 2021, Europe as a whole recorded a growth of 5.9 per cent in

18. Markus Wacket, Christoph Steitz and Tom Käckenhoff, "Germany Steps Up Efforts to Cut Russian Energy Reliance", Reuters, March 2, 2022, at <https://www.reuters.com/business/energy/ukraine-russia-crisis-forces-germany-rethink-coal-exit-2022-03-02/>. Accessed on September 27, 2022.

19. "Southern Gas Corridor", at <https://www.sgc.az/en>. Accessed on September 27, 2022.

20. European Commission, "Diversification of Gas Supply Sources and Routes", at https://energy.ec.europa.eu/topics/energy-security/diversification-gas-supply-sources-and-routes_en. Accessed on September 28, 2022.

21. Ibid.

22. IEA, "Coal 2018: Analysis and Forecasts", December 2018, at <https://www.iea.org/reports/coal-2018>. Accessed on September 28, 2022.

23. European Commission, Database, "Eurostat", at <https://ec.europa.eu/eurostat/web/energy/data/database>. Accessed on September 28, 2022.

coal consumption compared to an annual decline of 4.6 per cent in the period 2011-2021.²⁴ The reliance on coal to address the energy deficit has been further amplified by the growth in demand—the global energy requirement in 2021 grew by 1,577 terawatt hours (TWh) over 2020.

It is noteworthy that despite the EU Green Deal and the significant reduction of EU coal consumption in the prior decade, Europe has had to slide back to the use of coal rather than renewable energy (RE) sources primarily due to the disruption of supply chains due to the COVID pandemic and the consequences of the sanctions imposed due to the conflict in Ukraine. The resulting inflation in the price of LNG and supply issues has made coal the most affordable substitute to meet the energy demand for domestic and commercial needs.

The European Commission has had to acknowledge the indispensability of coal and the need for coal facilities to be used longer than was earlier envisaged. EU states have found themselves “extending the life of coal plants scheduled for closure, reopening closed plants or raising caps on their operating hours to reduce gas consumption.”²⁵ With no short-term resolution in sight, the Antwerp-Rotterdam-Amsterdam ports have seen a 35 per cent surge in the inflow of coal shipments as compared to the same period in 2021.²⁶ These ports are the major energy hubs of the region, and dry bulk coal imports are being stockpiled to meet the current gap in the energy requirement and the increased demand in the coming winter months in Europe. Additionally, there has been a shift from Russia to other places to secure coal for Europe, such as the US, Australia and Indonesia.

All these steps reinforce what Robert Bryce has characterised as “the iron law of electricity”, which suggests that states will fulfil their

24. British Petroleum, “Energy Charting Tool”, at <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/energy-charting-tool-desktop.html>. Accessed on October 6, 2022.

25. IEA, “Global Coal Demand is Set to Return to its All-Time High in 2022”, Press Release, July 28, 2022, at <https://www.iea.org/news/global-coal-demand-is-set-to-return-to-its-all-time-high-in-2022>. Accessed on September 29, 2022.

26. Serene Cheong and Ann Koh, “Europe Snaps Up Coal from Abroad to Fill Gap Left by Russia”, Bloomberg, July 5, 2022, at <https://www.bloomberg.com/news/articles/2022-07-05/coal-imports-pour-into-energy-starve-europe-from-around-globe>. Accessed on October 3, 2022.

energy needs at any cost, even if it is at the cost of decarbonisation.²⁷ Europe retracting from its commitment to the European Green Deal, which aims to make the EU a climate-neutral economy by 2050, is clear evidence of the same.²⁸ The EU Green Deal was built on the foundation of the Paris Agreement to cut down on greenhouse gas emissions. It enumerates sustainable development goals, specifically goal number 7 regarding the usage of affordable and clean energy.

However, following the sanctions on Russian fossil fuel and the energy security vulnerabilities highlighted by the overreliance on Russian energy imports, the European Commission has adopted REPowerEU—a proposal that includes attaining energy independence from Russian sources in addition to the shift to non-fossil, clean and renewable energy sources. Europe is not alone in these choices—according to an IEA report, the global demand for coal has risen by 0.7 per cent in 2022, which amounts to around 8 billion tonnes.

DIVERSIFICATION TOWARDS RENEWABLE ALTERNATIVES

The European Commission's REPowerEU plan is aimed at saving energy, producing clean energy and diversifying Europe's energy sources to gain independence from Russian supply. States are racing to fulfil their energy import requirements at the optimum price, and to improve infrastructure in order to import gas and transport it domestically inward. Member States have been required to add a REPowerEU chapter to their Recovery and Resilience Plans to channel investments to REPowerEU priorities and make the necessary reforms.²⁹ In terms of a short-term strategy to meet the

27. Robert Bryce, "Coal at \$200 a Ton and Soaring Use of Oil for Power Proves 'The Iron Law of Electricity'", *Forbes*, October 8, 2021, at <https://www.forbes.com/sites/robertbryce/2021/10/08/200-per-ton-coal-and-soaring-use-of-oil-for-power-are-proving-the-iron-law-of-electricity/?sh=20ef37c5539d>. Accessed on September 30, 2022.

28. European Commission, "A European Green Deal", at https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en. Accessed on September 29, 2022.

29. European Commission, "REPowerEU: Affordable, Secure and Sustainable Energy for Europe", May 18, 2022, at https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en#:~:text=REPowerEU%20is%20the%20European%20Commission's%20plan%20to%20make%20Europe%20independent,as%20possible%20to%20support%20Ukraine. Accessed on September 30, 2022.

energy requirements, the EU has mandated certain measures such as setting up the EU Energy Platform to procure common gas, LNG and hydrogen for the EU bloc, including Ukraine, Moldova and the Western Balkans. Cooperative agreements for low carbon gases, and accelerating solar, wind energy and biomethane development projects have also been deemed imperative. The EU Energy Platform will be instrumental in “pooling demand, coordinating infrastructure use, negotiating with the international partners and preparing for joint gas and hydrogen purchases.”³⁰ Stress is being laid on EU hydrogen projects along with advisories in the shape of EU Save Energy Communication to households and businesses. Additional advisories focus on a demand reduction plan which will enable states to fill gas storage to 80 per cent capacity by November 2022. The initiative also targets long-term measures of adopting clean and economical renewable sources for green transition and modifying fossil fuel-enabled transportation energy in order to reduce carbon emissions.

In service of its larger goals the REPowerEU plan has identified goals to be achieved by 2027. These include supporting investment and reform, working towards industrial decarbonisation, looking at alternative renewables with minimal environmental hazard, regulating energy efficiency in the transportation sector, and more.³¹ There are deliberations on increasing renewable energy targets to 45 per cent from 40 per cent under the Fit for 55 packages,³² as well as building hydrogen accelerators to produce and regulate hydrogen. The EU has also set in motion its Horizon Europe Framework Programme (HORIZON), which intends to fund research and innovation on climate change and has a budget of €95.5 billion. This furthers the European initiatives toward achieving the UN Sustainable Development Goals. The second pillar of the EU

30. Ibid.

31. Ibid.

32. Council of the EU and the European Council, “Fit for 55”, European Green Deal, 2021, at <https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/#:~:text=Fit%20for%2055%20refers%20to,line%20with%20the%202030%20goal>. Accessed on October 2, 2022.

HORIZON initiative is focused on technologies that support cleaner energy and sustainability.³³

Some of the alternative energy options which Europe is currently pursuing are discussed briefly below.

Solar Power

The EU Solar Energy Strategy was released under the REPowerEU initiative and is intended to produce photovoltaic energy to generate 320 GW of solar energy by 2025, which is to grow to 600 GW by 2030.³⁴ The EU has installed the Recovery and Resilience Facility (RRF) to provide additional EU institutional and national funding mechanisms. The strategy mentions the Solar Rooftop Initiative, solar PV manufacturing and installation of heat pumps to generate domestic and communal heating. A Biomethane Action Plan is also to be developed to produce around 35 bcm of energy by 2030 through the Common Agricultural Policy.

Hydrogen Power

The EU is promoting and forming legislation on hydrogen as an effective low-carbon technology and a viable renewable power. Hydrogen is considered a vital source of renewable energy to meet the aim of decarbonising energy usage and achieving climate neutrality in Europe as well as reducing Europe's import dependency. The European Commission has proposed including clean hydrogen production within its COVID recovery fund of €750 billion. Six major EU countries—Austria, Belgium, France, Germany, Luxembourg and the Netherlands³⁵—are enthusiastic about legislating on this option. Blue and green hydrogen are the preferred options in the EU hydrogen policy, green hydrogen being the cleaner form of the two. The EU

33. European Commission, "Horizon Europe, Research and Innovation, 2021", at https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en. Accessed on October 2, 2022.

34. Solar Power Europe, "EU Solar Strategy Explained: A New Dawn for European Solar, 2022", at <https://www.solarpowereurope.org/advocacy/eu-solar-strategy>. Accessed on October 3, 2022.

35. Kate Abenett, "Six EU Countries Lead Push for Clean Hydrogen Support", Reuters, June 15, 2020, at <https://www.reuters.com/article/us-eu-energy-hydrogen-idUSKBN23M18G>. Accessed on October 2, 2022.

Hydrogen Policy document points toward expanding and developing electrolyzers, decarbonising current hydrogen installations and shifting the transportation industry towards hydrogen while working on regulating its usage. The policy also enumerates the planned initiatives of Hydrogen Europe, an association for European-based businesses and stakeholders committed to achieving a carbon-neutral economy, to establish renewable hydrogen capacities of 40 GW in the European Union, and similarly in Ukraine and North Africa.³⁶ The European Clean Hydrogen Alliance has also been envisaged to develop and invest in hydrogen value-chain projects.³⁷

Wind Energy

Wind energy is another major technology that has the potential to provide a significant portion of the future renewable energy needs of Europe. The continent aims to achieve a wind energy generation capacity of up to 350 GW by 2030.³⁸ Offshore wind energy infrastructure, to a large extent, remains the most consistent form of energy generation among the renewable energy sources. The EU is also keen on developing floating wind energy systems for use internationally in different geographic spaces. This falls under the rubric of the EU Green Deal through the EU strategy of renewable energy.

Ocean-Wave Energy

Ocean energy encompasses all forms of energy which can be derived from the sea, using the power of tides, waves, salinity and water temperature to harvest electricity. The primary sources which

36. Gregor Erbach and Liselotte Jensen, "EU Hydrogen Policy: Hydrogen as an Energy Carrier for a Climate-neutral Economy, Briefing: Towards Climate Neutrality", European Parliamentary Research Service, April 2021, at [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/689332/EPRS_BRI\(2021\)689332_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/689332/EPRS_BRI(2021)689332_EN.pdf). Accessed on October 3, 2022.

37. European Commission, "Hydrogen: Europe's Industry Rolling Out Hydrogen Projects on Massive Scale", November 30, 2021, at https://ec.europa.eu/info/news/hydrogen-europes-industry-rolling-out-hydrogen-projects-massive-scale-2021-nov-30_en. Accessed on October 3, 2022.

38. European Commission, "Research and Innovation, Wind Energy", at https://ec.europa.eu/info/research-and-innovation/research-area/energy-research-and-innovation/wind-energy_en#:~:text=The%20EU%20currently%20has%20the,to%2024%25%20of%20. Accessed on October 4, 2022.

generate electricity through this method include tidal stream, wave energy, ocean thermal energy conversion (OTEC), seawater air conditioning (SWAC) and tidal range. Additionally, these forms of energy generation have a negligible environmental impact. Wave energy is considered to be the most capable source of power generation and can work in complement with other forms of renewable energy technologies.³⁹

Nuclear Power

The REPowerEU Plan identifies nuclear energy as a primary contributor to the security of the EU's energy supply. Stopping the phase-out of nuclear power stations, according to Foratom Director General, Yves Desbaizelle, can aid in lowering the EU's reliance on Russian gas.⁴⁰ He maintains that Europe should produce more low-carbon hydrogen by using a nuclear and renewable energy mix to generate power.

However, despite all these initiatives focusing on alternative energy sources, there still remains an energy deficit for Europe. In the short run, it is the coal-power plants which are being utilised to generate the electricity required to close the gap. The efforts aimed at diversification of energy sources will only bear fruit over a period of time.

SANCTIONS AS DOUBLE-EDGED SWORDS

EU imposed sanctions and Russia's consequent weaponisation of its energy trade have led to a predictable rise in the international price of fossil fuel as well as collateral impacts on the trade of food grains, fertilisers and defence equipment internationally. These consequences have only been exacerbated by the COVID related supply and economy disruptions, driving Europe to put in place a plan to devote €200 billion towards ending its reliance on Russian energy imports

39. Ocean Energy Europe, "Wave Energy", at <https://www.oceanenergy-europe.eu/ocean-energy/wave-energy/>. Accessed on October 5, 2022.

40. ForoNuclear, "Nuclear Energy Included in EU's Repowering Plan", May 26, 2022, at <https://www.foronuclear.org/en/updates/news/nuclear-energy-included-in-eus-repowering-plan/#:~:text=The%20European%20Commission%20has%20formally,security%20of%20EU%20energy%20supply>. Accessed on September 30, 2022.

by 2027. Although European markets were already in the process of shunning Russian energy products, Russian-owned refineries in Germany and Italy saw surplus business due to the sanctions, indicating a dilution of the intended impact and a low chance of a total energy embargo in the immediate future.⁴¹ Contrary to the hopes of the EU, its sanctions have not crippled Russia economically, nor have they deterred further Russian attacks on Ukraine. While it is true that European states have shifted their focus towards buying energy from African markets, Venezuela, Qatar and others, Russia has found strategic partners like India and China to provide a market for its energy exports.

IMPLICATIONS FOR INDIA

India is the fourth largest importer of LNG and the third largest in terms of crude oil in the global market. India's oil import dependency is 84 per cent and in the case of LNG, it is around 47.1 per cent in 2020-2021.⁴² The exporter for LNG supplies to India is Qatar with about 41 per cent, along with Angola, Nigeria, the USA and Australia, being the rest of the major suppliers. In the case of Qatar, there is also the added benefit of the relatively shorter commute to reach India. Despite having the capability to produce natural gas and oil to sustain the country's energy needs in terms of production and manufacturing, India has to rely on importing these commodities.

In India, natural gas is not commonly used for power generation due to the higher cost of production compared to "fossil fuels such as coal."⁴³ However, the government of India proposed "installing generation capacity of 175 Gigawatt (GW) of renewable energy by

41. Sergey Vakulenko, "A Big Bang? Anticipating the Impact of Europe's Sanctions on Russian Energy", Carnegie Endowment for International Peace, June 14, 2022, at <https://carnegieendowment.org/eurasiainsight/87318>. Accessed on September 25, 2022.

42. Petroleum Planning & Analysis Cell, "PPAC's Snapshot of India's Oil and Gas Data", Ministry of Petroleum and Natural Gas, Abridged Ready Reckoner, October 2022, at https://ppac.gov.in/uploads/whatsnew/1669288541_202211140258392628175Snaps hotofIndia'sOil&GasdataOct2022upload.pdf. Accessed on October 25, 2022.

43. Ameya Pimpalkhare, "India's Import Diversification Strategy for Natural Gas: An Analysis of Geopolitical Implications", ORF Issue Brief, December 6, 2019, at <https://www.orfonline.org/research/indias-import-diversification-strategy-for-natural-gas-58395/>. Accessed on 23 October 2022.

2022”⁴⁴ to use gas-powered electricity generation plants to meet the deficit in electricity generation. This would be essential to ensure grid balancing for constant power supply.⁴⁵ Hence, India has initiated the reliance on LNG imports, and developed the natural gas infrastructure extensively, such as—“long-distance pipelines, regasification terminals, and distribution stations for using more compressed natural gas in the transportation sector.”⁴⁶ India has six LNG terminals, however, the lack of developed pipeline infrastructure in the eastern and southern parts of the country, prevents the moving of LNG “from coastal LNG import terminals to major demand centres further inland.”⁴⁷ Furthermore, India has also been developing the first floating LNG terminal in Karnataka when the “New Mangalore Port Trust (NMPT) sign[ed] an agreement with Singapore-based LNG Alliance.”⁴⁸

As the Russia-Ukraine crisis has brought forward the issue of the importance of diversification of energy resources, it is also essential to work towards diversifying the country’s energy sources. As the region of West Asia remains the largest trading region for oil and gas imports to India, Iran and Qatar are crucial for the energy supply to the country. They are among the most vital energy trading partners for India in the Indo-Pacific and accounted for “two-thirds of oil and half the liquified natural gas (LNG) India imports come from the Strait

44. Press Information Bureau, “A Target of Installing 175 GW of Renewable Energy Capacity by the Year 2022 has been set: 100 GW of Solar Capacity by 2022 in the Country”, July 19, 2018, at <https://pib.gov.in/newsite/PrintRelease.aspx?relid=180728>. Accessed on September 25, 2022.

45. Anindya Upadhyay, “India to Test Gas-power Plants as ‘Peakers’ to Smooth Power Grid”, *The Economic Times*, August 16, 2018, at <https://energy.economictimes.indiatimes.com/news/power/india-to-test-gas-fired-plants-as-peakers-to-smooth-power-grid/65418654>. Accessed on September 29, 2022.

46. US Energy Information Administration, “Country Analysis Executive Summary: India”, November 17, 2022, at https://www.eia.gov/international/content/analysis/countries_long/India/india.pdf. Accessed on November 30, 2022.

47. US Energy Information Administration, “Growth in India’s LNG Imports will Depend on Completion of Connecting Pipelines”, *Today in Energy*, at <https://www.eia.gov/todayinenergy/detail.php?id=43655>. Accessed on November 30, 2022.

48. The Maritime Executive, “Agreement to Develop Karnataka’s First LNG Import Terminal”, January 6, 2022, at <https://www.maritime-executive.com/article/agreement-to-develop-india-s-first-lng-import-terminal>. Accessed on September 12, 2022.

of Hormuz.”⁴⁹ The United States imposed fresh sanctions against Iran in 2019, which led to certain incidents of attack on containers and ships passing through the region. The Indian Navy had to escort these carriers and ships for safety purposes while passing through the region.

As a consequence of the Ukraine crisis, the major Western importers of Russian gas and oil products, like the EU states, have declared their intention to boycott energy imports from Russia. However, as Russia remains the most important defence and strategic partner for India, the latter had abstained on the draft resolution against Russia for the deplorable operations inside Ukraine. India had sought to maintain the fine balance of both its Russian and Western allies in this particular context. Nevertheless, this act of balancing has not been met well by the United States and the other QUAD partners of India. It is viewed as a departure from India’s effort to counter China’s control in the Indo-Pacific, in the close relationship between China and Russia.⁵⁰ Additionally, to diversify its own oil and gas exports and continue the revenue from its energy trade, Russia has offered India energy supplies at a cheaper rate. India as a consequence has agreed to the purchase of energy from Russia and has protested the *politicisation* of India’s right to buy energy from Russia.⁵¹

The two biggest consumers of Russian oil now are India and China while Western countries impose sanctions and limit trade. Russia has been selling its oil at a discount to willing customers in Asia while major oil-producing countries try to preserve world prices

49. ET Bureau, “India Faces Biggest Impact of Tensions in Strait of Hormuz: IAE”, *The Economic Times*, July 20, 2019, at <https://economictimes.indiatimes.com/news/economy/foreign-trade/india-faces-biggest-impact-of-tensions-in-strait-of-hormuz-iae/articleshow/70301376.cms?from=mdr>. Accessed on November 12, 2022.

50. Jagannath Panda, “How is India’s Silent Diplomacy Navigating the Russia-Ukraine War?”, *The Diplomat*, March 8, 2022, at <https://thediplomat.com/2022/03/how-is-indias-silent-diplomacy-navigating-the-russia-ukraine-war/>. Accessed on December 28, 2022.

51. Kallol Bhattacharjee, “India has the Right to Buy Russian Oil”, *The Hindu*, at <https://www.thehindu.com/news/national/india-has-the-right-to-buy-russian-oil/article65237183.ece>. Accessed on December 28, 2022.

by restricting output.⁵² China and India's total oil imports from Russia surpassed those of the 27 EU members in March 2022.

Hence, it can be reiterated that to ensure a country's energy security, be it in Europe or India, it is crucial to diversify the energy imports for the smooth functioning of the economic activities and domestic needs of a state. Additionally, to mitigate climate-related crises in the long-term, it is also essential to attempt to diversify towards greener and more sustainable sources of energy generation. In an overall assessment, one might conclude that the sanctions have not delivered the expected impact of deterring the Russian offensive against Ukraine. In fact, it has led to an incongruent scenario where both sides believe they have the upper hand while facing severe economic and social consequences. Russia believes it has a stranglehold on the energy supply via the Nord Stream while the EU believes it is forcing restraint on Russia's course in Ukraine.⁵³ In the long run, the only conclusive benefit of the sanctions is that they might prove to be instrumental in successfully diversifying the energy trade and meeting the eventual goal of decarbonising the energy system of Europe, a benefit which will necessitate the EU playing the long game.

52. Shruti Menon, "Ukraine Crisis: Who is Buying Russian Oil and Gas?", BBC, December 6, 2022, at <https://www.bbc.com/news/world-asia-india-60783874>. Accessed on January 29, 2022.

53. Ibid.