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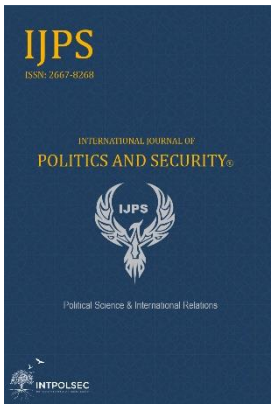


# Cartel to Player: OPEC Dynamics in the Global Oil Market

**Author(s) / Yazar(lar) :** Ninaad Ghoshal - Sanjay Kumar Pradhan

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# Cartel to Player: OPEC Dynamics in the Global Oil Market

Ninaad Ghoshal*
Sanjay Kumar Pradhan**

***Abstract***

*Since its formation in the 1960s as a regime, OPEC has primarily controlled the world's energy supply and price regulations. The journey of the organization as an energy cartel to the regional geopolitics and to face climate change challenges has been difficult. Although OPEC has undergone various changes in the coming time, its role in the energy market and process cannot be ignored. Despite the shifting energy market, OPEC will remain the dominant force in the coming year, even with the ongoing situation in the current global world order. This research paper intends to understand the various aspects within and outside OPEC, how its role plays a vital role in the current status of OPEC, and how much climate change will impact the organization as a whole.*

***Keywords:*** *Dissent, Energy Security, Energy Transition, OPEC, Russia-Ukraine war, Shale*

## 1. Introduction

In the era of the expanding economy, the world's dependence on fossil fuels like oil or natural gas has been the economy's driving force. However, in a world where oil has become a significant commodity, the demand and supply of "Black Gold", as some scholars have coined, has played a crucial role in oil and natural gas geopolitics. However, it is being observed that in the current scenario, the dominance of OPEC is slowly reducing rather than increasing due to the prominence of fractions within the grouping and the growing emphasis on shifting to clean and renewable energy resources. Studies earlier on the new challenges on OPEC by Fattouh and Sen (2016) have indicated that OPEC, due to its internal challenges and external factors, will lose relevance in the coming few years.[1] Reed (2021) has also added that OPEC has become irrelevant with the rise of the OPEC+, that OPEC must reinvent itself and find a way to, and that soon, there will be a need for more control over the organization.[2] Another

* Research Assistant, School of Liberal Studies, Pandit Deendayal Energy University, Gujarat, INDIA, gninaad@gmail.com, ORCID: 0009-0003-3099-2223

** Associate Professor, School of Liberal Studies, Pandit Deendayal Energy University, Gujarat, INDIA, sanjaypradhanjnu@gmail.com, ORCID: 0000-0002-3873-999X

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[1] Fattouh, Bassam & Sen, Anupama. (2016). The Past, Present, and Future Role of OPEC. 10.1057/978-1-137-55631-8_3.

[2] Reed, Stanley. "OPEC and Allies Hold the Cards as Prices and Demand Rise." The New York Times, June 29, 2021. https://www.nytimes.com/2021/06/29/business/opec-plus-meeting-preview.html.

study by Srisipurapu and Chatzky (2022) has shown that OPEC's relevance will be challenged. However, the organization's dominance will remain in the international market[3]. Slav (2024) stated that OPEC will undergo a significant transformation in the coming days, facing multiple challenges and a critical transition. Still, it will be able to adapt to the coming changes at large.[4] The various views talking about the fall and substance of OPEC now beg the question, what is the future of OPEC? Will OPEC remain a relevant body in the current scenario, or will the organization be unable to bear the weight of the changing wind and become obsolete in the coming times?

In the scope of understanding OPEC, through the lens of global geopolitical dynamics and geopolitics of energy security, the paper attempts to analyze whether oil and OPEC lose their prominence due to the energy transition and shale boom across the globe, growing geopolitical concerns with rising factionalism within the OPEC. Furthermore, All these aspects have been analyzed through the exploratory method, where secondary sources like articles and organizational data data such as IEA, E.I.A., and I.S.A. are used to create an understanding and analysis of the topic.

## 2. Herald of a New Era

Before the establishment of the Organisation of the Petroleum Exporting Countries (OPEC) in 1960, the global energy market was primarily regulated by the 'Seven Sisters', the major multinational oil companies which included Anglo-Persian Oil, Gulf Oil, Standard Oil of California (SOCAL), Texaco, Royal Dutch Shell, Standard oil company of New Jersey and Standard Oil company of New York[5] The seven sisters used to determine the oil flow exclusively to control and have a monopoly on the oil prices in the international energy market. However, this monopoly infuriated the countries where the oil was produced and exported. Despite possessing vast petroleum resources, they were forced to purchase them from the companies at a prohibitive rate compared to their Western counterparts. It is congruent with the fact that since the discovery of massive oil blocks in the 1920s in Saudi Arabia, these companies

[3]. Anshu Siripurapu and Andrew Chatsky, "OPEC in a Changing World," Council on Foreign Relations, March 9, 2022, https://www.cfr.org/backgrounder/opec-changing-world.
[4] Irina Slav, "OPEC's Influence on Oil Prices to Remain Significant in 2024," OilPrice.com, December 29, 2023, https://oilprice.com/Energy/Crude-Oil/OPECs-Influence-on-Oil-Prices-To-Remain-Significant-In-2024.html.
[5] Adam Hayes, "Organization of the Petroleum Exporting Countries (OPEC)," Investopedia, accessed March 17, 2024, https://www.investopedia.com/terms/o/opec.asp.

attempted to gain access to oil-rich countries. The first commercial exploration of oil at Dammam (now Dhahran) by American company SOCAL in Saudi Arabia in 1938 heralded a new phase of global energy exploration. Soon, many other companies, like vultures, started venturing into the West Asian energy resource market, monopolizing the multinational companies. By depriving the oil-rich countries of their resources and say on production, refining, and the price mechanism, the major global oil companies led the ground for dissent and discontent in their backyard, and this led to the establishment of OPEC as an intergovernmental organization or cartel in 1960 and the consequent gradual decay of the 'Seven Sisters'.[6]

As signed in Baghdad in 1960, the OPEC Charter began with the core objectives to regulate oil production and supply and price mechanisms. In a broader spectrum, the objectives included: "Co-ordinate and unify petroleum policies among the member countries, to secure fair and stable prices for petroleum producers; an efficient, economical and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry." During the transitional period in the 1960s, OPEC established its footprint in the global energy market by gradually overthrowing the 'Seven Sisters' in decision-making and price regulations[7]. In the 1970s, OPEC became more prominent as its member countries took complete control of domestic petroleum industries and the world energy market. However, the decade witnessed several impactful events that caused volatility in the global oil market, specifically the Arab oil embargo against the U.S. and its allies for supporting and assisting Israel in the Israel-Arab war. The embargo had spiraling effects that caused hardship for developing countries that had already experienced economic challenges, even in their transition from decolonization to development. So, OPEC broadened its mandate at the Algiers Summit in 1975, which addressed the necessity for taking care of the plight of the lower-economic states for their economic development and political stability; consequently, the establishment of the OPEC Fund for International Development in 1976[8]. However, the global economic recession in the early 1980s did not make headway for oil, and the energy demand slumped.

[6] India , Government of. "Formation of OPEC." Ministry of External Affairs. Accessed September 22, 2023. https://eoi.gov.in/eoisearch/MyPrint.php?8874%3F001%2F0029.
[7]Albert Danielsen, "OPEC," Encyclopædia Britannica, January 10, 2017, https://www.britannica.com/topic/OPEC.
[8] OPEC. "Brief History of OPEC." OPEC. Accessed September 22, 2023. https://www.opec.org/opec_web/en/about_us/24.htm.

Nevertheless, in the late 1980s, the OPEC oil market recovered, and its share of newly growing world output began to heal due to the revival of global economic growth. The first Gulf War in 1991 created a panic in the global energy market. The growing economic liberalization and a high economic growth rate worldwide in the aftermath of the Cold War necessitated more energy requirements, and crucially, Brent crude oil reached an all-time high of $147.50 in July 2008.OPEC today produces about 45% of the global oil and constitutes over 80% of "proven" reserves in the international oil market. However, since the beginning of the 21st century, the OPEC cartel has faced various challenges in its market regulations, which can be analyzed through the issue of Saudi dominance, the price war and the emergence of OPEC+, the shale boom, the quest for alternative sources of energy and OPEC-IPCC debate on net-zero emission.[9]

**3. Dissent and Discontent from within**

The global crude oil price is much affected by the supply and demand theory of economics, i.e., the greater the demand, the higher the price, and the more the supply, the lesser the demand and price. Hence, it is evident that OPEC uses this simple theory to control the arteries of the international energy market. The global demand directly impacts member countries' produce and supply, primarily set by a "Quota system" in the OPEC regime. A quota is a set of production and supply rules usually based on the economic condition of each country concerned. A member country's GDP and economic output are vital in determining how much the state can handle production. It is based on the assumption—that the lesser the G.D.P., the lesser the capacity to produce oil and export.[10]

The quota-determining formula is relatively insignificant here. The paradox of the quota system is that a member country can only produce a little even when it is in dire need of revenue generation to pay back the external borrowings and raise its economic growth level. For most OPEC countries, energy constitutes the most significant chunk of revenue. The quota system has adverse ramifications for the low-level economies in cartels.

[9] Fattouh, Bassam, and Andreas Economu. “OPEC at 60: The World with and without OPEC.” OPEC Energy motion , May 7, 2021. https://www.opec.org/opec_web/en/906.htm.
[10] Ghoddusi, Hamed, Masoud Nili, and Mahdi Rastad. “On Quota Violations of OPEC Members.” *SSRN Electronic Journal*, 2017. https://doi.org/10.2139/ssrn.3050369.

First, as each country is assigned to produce a particular amount of crude in a period, its failure due to an economic crisis will cause a loss of membership, which is a significant setback to a member country. Second, a country overburdened with external borrowing wants to increase its production level, which the cartel allows as it exceeds the quota. Therefore, Ecuador left the cartel in 2020 as it could not produce enough to repay external borrowings. Other member countries like Iran, Libya, and Venezuela are unhappy with the system as the system benefits those who have higher G.D.P. and robust economies like Saudi Arabia and U.A.E.

Third, for these countries, the quota system has a detrimental effect as it does not allow them to grow to their production level due to economic hardships. Oil is not the only sector of these countries that concentrates on their multi-faceted growth and development process[11]. As Qatar felt it could not produce the oil to the quota level because of its shifting focus on mammoth natural gas resources, the country left the cartel, anticipating it could not meet the oil production quota.

Likewise, Bahrain is unhappy with how the bigger states like Saudi Arabia have treated members of the OPEC. It has asked Riyadh to change OPEC's increasing and decreasing oil production system. Bahrain accuses Saudi Arabia of having its way of dictating the terms of the quota system to maximize its benefits. The small countries (in terms of economic growth) have little role in production, supply, and price determination[5]. More mention, in the wake of the 'price war' (2014-2016), there was a drastic crude price decline, and Saudi Arabia opted for an indefinite war to survive OPEC stakes in the energy market. Still, the low-performing economies, which had faced severe economic hardship, opted for a production cut, which was unfortunately unmet. Frontline countries in this regard included Gabon, Equatorial Guinea, Algeria, Congo, Libya, and Venezuela. Therefore, the quota system and the dominant role of Saudi Arabia (and the U.A.E.) created division and inequality from within the cartel. As there is intense geopolitical competition between Iran and Saudi Arabia, Tehran is a vehement critic of the dominant role of Saudis, both within and outside the OPEC. On the same line, Qatar also

[11] OPEC's Challenge: Rethinking its Quota System - oil & Gas Journal. Accessed September 22, 2023. https://www.ogj.com/drilling-production/production-operations/article/17239967/opecs-challenge-rethinking-its-quota-system.

had geopolitical and policy discomfort with the Saudis and OPEC before it left OPEC in 2019. [12]

**4. Price War and Emergence of OPEC+**

In recent times, "price war" has become a standard tool to shape energy geopolitics at the regional and international levels. A price war is a strategy to control oil prices to ensure that an organization, a group of countries, or a country's prominence is felt internationally. In extremity, it is a destabilizing development in the market based on the whims and fancies of a country or group of countries, establishing footprints in the existing markets and consolidating the existing market. Sometimes, the strategy acts as a "weapon" to punish the adversary. Today's price war is between OPEC and emerging non-OPEC oil-supplying nations—crucially led by energy power Russia. This group counterbalances the hegemony of OPEC and de-cartelize oil in the international oil market by excessively releasing their crude oil reserves. Though agreements have been made between the two sides, agreements on production and supply have created situations where OPEC price in the mid-2010s was reduced to the level of 'no profit' in the garb of a "price war."[13] Since the last decade, external factors have made it challenging for OPEC to regulate the energy market alone due to a slump in global energy demands, competition from non-OPEC suppliers, and other related factors.

The major oil slump that led to the 'price war' in the twenty-first century dates back to 2014 and ended in 2016. Where various factors attributed to that outcome: First, the economic slowdown in the West and China and the resulting decline in oil demand; second, fast and large-scale pumping of Russian energy for its economic boom; third, the largest importing country of the world—the U.S.A.—turned as a net exporter of energy due to its shale boom; fourth, war-ravaged Iraq and civil-war-ridden Libya unexpectedly recovered from their economic slowdown and thus increased its oil production; and fifth, the ever-increasing share of renewables in the global energy basket. Consequently, international Brent crude oil prices were reduced drastically by an average of $55 in the three years of price decline in 2015. Fortunately, this situation ended with an agreement signed between OPEC and non-OPEC oil suppliers,

[12] Bahrain, Government of. “Minister of Oil: OPEC Decision Key for Market Stability.” Ministry of Public information , October 16, 2022. https://www.bna.bh/en/.
[13] Fattouh, Bassam, and Andreas Economou. “OPEC at the Crossroads.” Oxford Institute for Energy Studies, 2018. http://www.jstor.org/stable/resrep33952.

better known as the OPEC+ Deal 2016, in which the countries agreed to a production cut. The price war was based on the assumption that if OPEC cuts production but non-OPEC suppliers do not, then the former's price will rise, and the latter's price will go down. Consequently, global demand will favor non-OPEC oil, and they will capture the market. This assumption also makes excellent sense as Russia's oil sector has been on the boom to recover its lost past, and the country is now looking for more export destinations than before[14]

Nevertheless, it is pertinent that OPEC will face tough competition from the non-OPEC players in the future since they are not bound by any international law on their production, supply, and price determinations. Nevertheless, the mutual understanding and cooperation in the 1910s and recently in the Russia-Ukraine war testifies to how OPEC+ countries regulate the global oil market.

**5. Russia-Ukraine war and OPEC geopolitics**

Russian President Vladimir Putin's "Special Military Operation" on February 24, 2022, and the Russia-Ukraine war have created unprecedented development in the international energy market, particularly in Europe. As the war broke out, prices skyrocketed to $140 a barrel in March 2022, the highest since 2008, thus worsening inflationary pressures.[15] Under this compelling situation, the U.S. approached OPEC, specifically Saudi Arabia and the U.A.E., to increase crude production. However, they remained defiant to the American call, taking into account "volatility in the oil market"-caused by war. However, this is a half-truth. Other factors also caused an increasing gap in the relationship between OPEC and Saudi Arabia, on the one hand, and the West, on the other.

First, Western interference in the international oil market has much perturbed Saudi Arabia and other OPEC countries. Second, member countries are much disturbed by the U.S. and Europe's continuous attempts to discard oil in the energy transition efforts to guard against climate change. Third, the shale boom of the U.S. reduced dependence on OPEC oil and OPEC's drastic decline of oil supply to the U.S. market. Fourth, Americans' criticism of human rights

[14] Pineda, Mathew Emmanuel. "Why Are Oil and Gas Prices Going up: Impact of Russia-Ukraine War." Profolus, March 29, 2022. https://www.profolus.com/topics/why-are-oil-and-gas-prices-going-up-impact-of-russia-ukraine-w

[15] Khan, Sarmad. "OPEC Keeps 2022 Oil Demand Forecast Unchanged despite Inflation and Ukraine War." The National, September 13, 2022. https://www.thenationalnews.com/business/energy/2022/09/13/opec-keeps-2022-oil-demand-forecast-unchanged-despite-inflation-and-ukraine-war/.

issues in Saudi Arabia, explicitly questioning the murder of Jamal Ahmad Khashoggi, the dissident journalist of Saudi Arabia, has created a public, political, and diplomatic outrage among Americans against the Saudis[16]. Fifth, there is a possible resumption of Washington's nuclear deal with the strategic competitor and historical arch-rival of Riyadh—Tehran. Sixth, Saudis view Russia as a more critical strategic partner than the U.S. today. Seventh, OPEC+ wants to keep Russia in orbit where Moscow is very comfortable.

Instead of increasing production to meet the wartime crisis, as requested by the West, OPEC+ went with a more radical production cut of 2 million barrels per day, starting from November 2022. Justifying the move, the OPEC+ countries stated that the step is due to sagging oil prices stemming from ongoing geopolitical tensions, renewed pandemic in China, supply chain issues, rising inflation, high sovereign debt levels in many regions, and expected monetary tightening by the U.S., European Union, and the U.K. central banks. To counter this justification, Biden, the U.S. president, called it "moral and military support" for Russia in its war against Ukraine[17]. Nevertheless, Moscow wants to keep the supply level down so that demand drives the price up. Russia benefits the most from this 2 million barrel cut per day[i], as it has come down heavily to its supply level because of Western sanctions. Russia's supply cut intends to punish the adversaries and use energy as a tool of coercive diplomacy against the West for Ukraine's surrender.

Along with this, Russia wants an oil shortage and price rise in Europe so that the NATO countries will pay heavily to support Ukraine, and the increased price and European discontent against NATO will lead to Russian leverage on war. Most recently, despite the E.U. and G-7 Price Cap of $60 per barrel on Russian oil, OPEC has tightened to its earlier production cut of 2mbd, which signifies how OPEC and Russia have a mutual understanding to keep their market interest intact despite challenges. Nevertheless, production cuts and a "price cap" will affect the global oil market. This can be illustrated by the fact that while the 2023 forecast indices global

[16] BBC NEWS, “OPEC: What Is It and What Is Happening to Oil Prices?,” BBC News, June 5, 2023, https://www.bbc.com/news/business-61188579.
[17] Hernandez, M G. “US Says Opec Cuts ’moral and Military Support for Russia’s Ukraine War.” Anadolu Ajansı. Accessed September 22, 2023. https://www.aa.com.tr/en/americas/us-says-opec-cuts-moral-and-military-support-for-russias-ukraine-war/2711068.

oil demand growth of 2.7mbd[18], The 2mbd production cut by OPEC+ implies how OPEC has set the strings and how the price cap will adversely affect the international oil demands further.

**6. Shale vs OPEC: Competition ahead?**

With growing research on shale energy exploration and the shale boom in the US, it is expected that it could be a potential alternative to OPEC energy. The arrival of shale energy has posed a revolution in the energy sector, with significant shale deposits being found in the US, Canada, France, Brazil, Argentina, and China. Many countries have already started exploration in their countries since it is available in their territorial zones and is a cheaper alternative for the countries possessing it. Since the early 2010s, shale has been the primary supplier to the American energy basket. The exploration has increased from 0.4 billion barrels in 2007 to 4 million barrels in 2014. [19]In 2018, shale energy production touched 1,00,000 barrels per day[20]. In 2012, shale constituted 39 percent of all natural gas produced in the US and is likely to reach 49 percent by 2035[21]

Further, the IEA has predicted that the US will be the lead crude oil producer by 2030 and the net global exporter shortly. Following the success of shale in the USA, many nations that had their shale deposits extended their production missions. Australia and China are the two nations that are considering creating shale exploration companies[22]. India, the third largest energy consumer after the US and China, has six central shale reserves and has successfully started commercial exploration.[23] Thus, OPEC must face challenges in rising shale energy production and a drastic decline in USA dependency on OPEC resources and other countries striving in this sector. However, the question now arises: Will this shale be substantive enough to dent OPEC dominance?

[18] Khan, Sarmad. "OPEC Keeps 2022 Oil Demand Forecast Unchanged despite Inflation and Ukraine War." The National, September 13, 2022. https://www.thenationalnews.com/business/energy/2022/09/13/opec-keeps-2022-oil-demand-forecast-unchanged-despite-inflation-and-ukraine-war/.
[19] Kilian, Lutz. "How the Shale Oil Revolution Has Affected US Oil and Gasoline Prices." CEPR, January 14, 2015. https://cepr.org/voxeu/columns/how-shale-oil-revolution-has-affected-us-oil-and-gasoline-prices.
[20] Owyang, Michael T., and Hannah Shell. "The Rise of Shale Oil." Saint Louis Fed Eagle, December 9, 2021. https://www.stlouisfed.org/on-the-economy/2018/may/rise-shale-oil.
[21] Pradhan , Sanjay Kumar. *Shale Gas in Indo-US Cooperation. Geopolitics.* 2020th ed. Vol. 1, n.d.
[22] Scott Weeden, "Australia Pushes Boundaries on Shale Development," Hart Energy, January 7, 2014, https://www.hartenergy.com/ep/exclusives/australia-pushes-boundaries-shale-development-20234.
[23] Pathak , Kalpana. "Cairn Bets on Shale, Sees 10% Drop in India's Oil Imports at Peak Output." The Economic Times, April 18, 2022. https://economictimes.indiatimes.com/industry/energy/oil-gas/cairn-bets-on-shale-sees-10-drop-in-indias-oil-imports-at-peak-output/articleshow/90899540.cms.

Shale energy is contested on various counts. First, in fracking, vast amounts of water and chemicals bring the shale to the ground. Consequently, there has been a decline in the water table, and water flow is contaminated. Although there are arguments that contaminated water can be reused or recycled, there has yet to be a satisfactory conclusion. Countries like Germany, France, Spain, Tunisia, and some states or Provinces of the USA and Canada (Quebec. ) have banned the fracking process and shale exploration. Second, the price of shale energy could be more cost-effective. Third, the infrastructure has not been developed to a level where the shale energy can be transported in a viable way. Fourth, fracking technologies and equipment are costly and not readily available.[24]

Nevertheless, whether the problems related to shale extraction arise if the shale industry can overcome the initial issues, will shale pose a competitor to OPEC?

The growing popularity of shale is also due to rising geopolitical issues—conflicts across the world. The end of the shale revolution in the United States has already alleviated the fear of future price spikes, with most shale being extracted from the nation.[25] The growing conflict between the U.S and Russia over Ukraine has already led to the fear that there will be a significant rise in shale production by other nations like China, and the availability of Chinese shale will lead to a vast drop in shale prices, making shale a viable source of energy in the future.[26] As discussed earlier, the current tussle between OPEC and OPEC+ on oil production will lead to OPEC facing a challenge from shale on grabbing market potential in the future.

An important assumption can be cited here. If there is an era of shale in the future, then the US, the leading shale producer, will play a role in shaping the global energy market as Saudi Arabia does today in OPEC. However, the arguments assumed here do not clearly explain how shale will stride into the international energy basket—as it is best with many challenges today. Nevertheless, if the shale boom happens shortly, OPEC must create a new order in the oil market to sustain itself. However, this prospect seems a remote possibility as the world is

[24] Wihbey, John. “Pros and Cons of Fracking: 5 Key Issues " Yale Climate Connections.” Yale Climate Connections, April 26, 2022. https://yaleclimateconnections.org/2015/05/pros-and-cons-of-fracking-5-key-issues/.
[25] Browser , Derek, and Myles Mcormick. “What the End of the US Shale Revolution Would Mean for the World.” Financial Times . Accessed March 13, 2024. https://www.ft.com/content/60747b3b-e6ea-47c0-938d-af515816d0f1.
[26] Salygin, Valery, Igbal Guliev, Natalia Chernysheva, Elizaveta Sokolova, Natalya Toropova, and Larisa Egorova. 2019. "Global Shale Revolution: Successes, Challenges, and Prospects" *Sustainability* 11, no. 6: 1627. https://doi.org/10.3390/su11061627

looking for more energy today that is available at the doorstep and is affordable—either from OPEC or OPEC+ or non-OPEC suppliers.

**7. Climate Change and Urge For Energy Transition**

Climate change refers to a long-term shift in temperature and weather patterns, mainly caused by human activities, especially the burning of fossil fuels, including oil. Global warming and climatic change have made nations think of ways to minimize carbon emissions and boost energy transition, primarily shifting to renewable and new energy sources. Many countries have started taking steps to reduce their dependence on fossil fuels. Intense debate on global warming and climate change issues, along with diversification of resources, have taken place in many United Nations Framework Convention on Climate Change (UNFCCC) summits, such as Paris (2015), Glasgow (2021) and Sharm El-Sheikh (2022). According to an IEA report, it is expected that by the end of 2023, about 300-320 GW of renewable energy will be generated, a 7-10% rise from the 2022 level.[27]

In addition, it is predicted that there will be a significant increase in the production of Solar energy by 2023, thanks to the various efforts made by the International Solar Alliance and steps taken by the responsible countries. However, according to a report of the International Non-Renewable Energy Agency (IRENA), the demand for fossil fuels is expected to increase by 2035 and decline afterward, i.e., a 10-20 percent reduction by 2050. It is also likely that by 2050, many states will have partially or banned the usage of cars and vehicles that use carbon-based fossil fuels as a source of energy[28]. The new climate action plans, such as Nationally Determined Contributions (NDC) and review and revision of the NDCs every five years, imply that many nations have taken pledges to reduce climate change to avoid a global catastrophe.[29] Accordingly, some countries have amended their climate change policies to meet the goals set in COP21 (2015). For example, China announced that in 2017 it had already met

[27] Iea. "World Energy Outlook 2012 – Analysis." IEA. Accessed September 22, 2023. https://www.iea.org/reports/world-energy-outlook-2012.
[28] Global Energy Review 2021 - .NET framework. Accessed September 22, 2023. https://iea.blob.core.windows.net/assets/d0031107-401d-4a2f-a48b-9eed19457335/GlobalEnergyReview2021.pdf.
[29] Nation , United. "The Paris Agreement." United Nations. Accessed September 22, 2023. https://www.un.org/en/climatechange/paris-agreement.

its goals which were set for 2020, making an enormous leap in climate change, and in 2018, France, Portugal, and Sweden reached the track to achieve their target on time.[30]

As there is progress in renewable, it is expected that OPEC will gradually lose its market share in the global energy basket. Therefore, OPEC must consider making the oil regime relevant due to the demand for renewable energy.[31] The OPEC must ensure that the world's dependency on oil never weans, look forward to a climate change mitigation strategy, or create a non-renewable energy sector within its organization, which he analyzed later.[32] Nevertheless, there are some impediments to the growth of the renewable industry. For example, Europe, which is looking much for renewables, has yet to be able to meet the demands. And expectations of COP21. Except for France, Portugal, and Sweden, achieving the 2022 target under the COP21 protocol seems bleak for all European nations.

OPEC shall face a challenge, but the question remains: will it be enough? Will OPEC face enough challenges from the renewable sector where its longstanding dominance could be undermined? The answer to these questions would be that OPEC is expected to see a minor challenge in its production shortly, mainly because the renewable sector has not reached the level of replacement oil. The slow growth can be attributed to the: First, technology, and equipment are not available at an affordable price; Second, there is no universalization of the availability of equipment; Third, as an investment at the initial level, is expensive, the least developed and developing countries find it challenging to go for renewables; Fourth, lack of enthusiasm for the nations. For instance, although the International Solar Alliance was established in 2015, there is no headway in policy framework and execution. Fifth, the COVID-19 pandemic and the Russia-Ukraine war have caused unexpected burdens on the global economy, which may push all the nations' pledges and reports of the international agencies to extend the timeframe to meet the demands for renewable and net-zero emissions. And

[30] IEA. “Renewable Energy Market Analysis.” Renewable Energy Market Analysis, January 1, 2022. https://www.irena.org/publications/2022/Jan/Renewable-Energy-Market-Analysis-Africa.
[31] Daukoru, Edmund Maduabebe. “OPEC’s Strategy in Facing the New Energy Challenges.” OPEC. Accessed September 22, 2023. https://www.opec.org/opec_web/en/1098.htm.
[32] Sengupta, Ahona. “International Solar Alliance Could Replace OPEC for World’s Energy Needs, Says PM Modi.” News18, October 2, 2018. https://www.news18.com/news/india/international-solar-alliance-could-replace-opec-for-worlds-energy-needs-says-prime-minister-narendra-modi-1896267.html.

expectations of COP21. Except for France, Portugal, and Sweden, achieving the 2022 target under the COP21 protocol seems bleak for all European nations.[33]

The slow growth can be attributed to the: First, technology, and equipment are not available at an affordable price; Second, there is no universalization of the availability of equipment; Third, as an investment at the initial level, is expensive, the least developed and developing countries find it challenging to go for renewables; Fourth, lack of enthusiasm for the nations. For instance, although the International Solar Alliance was established in 2015, there is no headway in policy framework and execution. Fifth, the COVID-19 pandemic and the Russia-Ukraine war have caused unexpected burdens on the global economy, which may push all the pledges of the nations and reports of the international agencies for extension of timeframe to meet the demands for renewable and net-zero emissions.[34]

**8. Energy Transition: Debate between OPEC and IPCC**

While American President Joe Biden advocates stoutly for a net-zero emissions[i] goal by 2050 to slow down global warming and most of the countries in the world are embracing renewables, contrarily, OPEC and the leading OPEC nation Saudi Arabia claims a bright prospect for oil. The OPEC sees that the demand for oil resources will increase for at least the next two decades. The Saudi Energy Minister, Abdulaziz bin Salman, equated the International Energy Agency's (IEA) urge to transition to renewable energy with the La La Land movie, as the global demand for oil consumption is increasing steadily.[35] The OPEC disputes the global campaign for net-zero emission timelines by citing the argument that this effort will go drastically against new and renewed investment in oil exploration and supply. If there are investments in the oil sector, there will be a halt in production, and thus, there is the risk of a severe energy deficit in the world, which even the alternative resources cannot compensate for. OPEC seeks the Intergovernmental Panel on Climate Change (IPCC) to remove the references to “phase out of fossil fuels” and “urgent and accelerated mitigation” of these resources from various reports. Likewise, it urges IPCC to omit “decarbonization” and “rapid shifting to zero-

[33] Ellebereck , S. (2022). *Explainer: What is OPEC?*. World Economic Forum. https://www.weforum.org/agenda/2022/11/oil-opec-energy-price/
[34] Koshty, Miriam. “Https://Www.Downtoearth.Org.in/News/Energy/Renewable-Energy-Use-Is-Growing-but-at-a-Slow-Pace-60935.” Down to earth , n.d.
[35] Wald, Ellen R., and Jonathan H. Ferziger. “Climate Policies Could Hand Power and Profits Back to OPEC.” Foreign Policy, June 16, 2021. https://foreignpolicy.com/2021/06/16/climate-goals-opec-oil-prices-energy-crisis-shortages-fossil-fuels/.

carbon sources" while advocating for "Transitioning"[ii] to low-carbon economies through planned interventions and transitioning options"[2] Saudi Arabia even discards the referencing of "transformation" in global environment reports as it has policy implications for immediate execution under COP21 agreement, which pledges for reducing global warming to the level below 2 degrees Celsius, and preferably to 1.5°C.Iran questions the feasibility of reducing global warming to 1.5°C; instead, it talks of 2°C due to the pressing demand for fossil fuels to meet developmental goals. Iran also upholds that "given the current trends and technologies, a continuous annual reduction of more than 5% greenhouse emission between 2021 and 2030 is highly unlikely."[36]. It is evident that even developed nations have not yet successfully and consistently reduced emissions to this level. If global warming is restricted by two °C, about 30% of oil, 50% of gas, and 80% of coal reserves must remain unburnt on Earth. So, from where will the energy come to meet the present demand and future requirements? OPEC forecasts that oil consumption will rebound above 100 million barrels daily in 2023 and advance to 107.9 million in 2035. Although renewables are the fastest-growing energy sources, they will constitute a mere 10 percent of the global needs by 2045.[37] Therefore, the question arises of how the remaining demand would be met. Taking stock of the complex realities and energy necessities, Mohammed Barkindo, the former Secretary General of OPEC and a vehement critic of "Transition", argued for the prominence of oil in the global energy architecture. He says, "The narrative of the energy transition from fossil fuels to renewable is misleading. A rapid transition from oil and natural gas is not only impractical but also can cause potential damage to poor countries and the global economy.". Saudi Arabia outrightly questioned the international conventions for "undermining all carbon removal technologies such as Carbon Capture and Utilisation (CCU)[iv] and Carbon Capture and Storage (CCS) and thus limiting the scope for rethinking on 'carbon neutrality' and 'carbon sequestration'."[vi]Substantiating this, Saudi Arabia's preferred stand for tackling climate change includes the burning of hydrocarbons and the use of technologies to suck the emissions, which is well known as the Circular Carbon Economy. In line with this, it complains that the IPCC does not give sufficient

[36] Whitaker, Brian. "Climate Change: Saudi Arabia and OPEC Resisting Action on Fossil Fuels." al. Accessed September 22, 2023. https://al-bab.com/blog/2021/10/climate-change-saudi-arabia-and-opec-resisting-action-fossil-fuels.
[37] Smith, Grant. "OPEC Sees Oil Demand Growth to 2035 Unchecked by Climate Fight." Bloomberg.com, September 28, 2021. https://www.bloomberg.com/news/articles/2021-09-28/opec-sees-oil-demand-growth-to-2035-unchecked-by-climate-fight.

attention to the feasibility of Direct Air Capture (DAC), a technology that is at the initial phase of research that can extract carbon dioxide from the atmosphere, store and use those gases in the various industrial processes; and thus stop contributing to global warming. The OPEC cartel also complains that CCU, CCS, and DAC technologies are excluded while discussing sustainability. However, on the other hand, taking advantage of these technologies and processes, the countries will go for more GHG emissions now than before with an assumption that these gases could be drawn out of the air later, thus opening up the possibility of bringing the temperature back to what the nations achieved so far since COP21 conference. Further, according to Professor Robert Howarth of Cornell University, "There is no scientific evidence that humanity can rely on carbon capture or direct air capture this way." Although the IPCC report refers to DAC and CCS, there are no detailed outlines, and uncertainty on the feasibility of the technologies and mechanisms looms large. Further, climate activists discard these innovations as they are expensive, unproven at scale, and polluting[38]

On another count, the cartel delineates that resources need not be blamed; how they are explored and utilized is essential[39]. Nevertheless, the issue of extraction and refinement has its challenges, and OPEC still needs to create a cohesive strategy. This has led many states to ask OPEC to take responsibility for their actions, especially the US, which has passed a Bill in Congress titled "OPEC Accountability Act" that requests the OPEC, mainly the significant producers 'allies to the United States, to hold themselves accountable and start developing a better green program for the organization The claims are in unity to the fact that how the Gulf, the largest oil-producing region in the world, has turned itself into a hotspot of frequent weather change. OPEC's indifference to oil challenges has led them to a climate emergency, at least in their region. Despite all the evidence pointing toward a climate catastrophe, there has not been much reaction or response from many oil companies in the cartel's production cycle.

Many of these companies have called for better solutions for the future rather than taking immediate and concrete steps to reduce pollution. Therefore, OPEC now has to take steps to

[38] Nasralla, Shadia. "OPEC Makes Case for Fossil Fuels at UN Climate Conference." Reuters, November 10, 2021. https://www.reuters.com/business/cop/saudi-minister-says-climate-fight-shouldnt-shun-any-particular-energy-source-2021-11-10/.
[39] Naimoli, Stephen, and Sarah Ladislaw. "Front Matter." *Oil and Gas Industry Engagement on Climate Change: Drivers, Actions, and Path Forward*. Center for Strategic and International Studies (CSIS), 2019. http://www.jstor.org/stable/resrep23551.1.

ensure they can control the damage they are causing to the environment before it is very late and the environmental damage reaches a point of no return[40]. So, the question now arises: what has OPEC done to address the situation? The answer, perhaps, is that, for its part, it has done lip service only to the issues rather than taking any concrete actions on the same. No doubt, OPEC has created its environmental policy to have its stakes alongside oil; it is an active participant in climate conferences for a better world and brighter future and is conducting multiple seminars, discussions, and debates in the aegis of OPEC. However, the cartel has not taken visible steps to tackle the climate change challenge and promote renewables cohesively.

## 9. Conclusion

The OPEC cartel has ended the corporate exploitation of Seven Sisters and acts as an energy player in the global energy market. Since its establishment, despite having erratic setbacks due to geopolitical dynamics and international economic factors, OPEC virtually had a monopoly over the flow of petroleum resources in the energy market till the mid-2010s when it faced the challenges of different types—characterized by competition from the non-OPEC oil exporting countries especially Russia, shale boom in the US and increasing production of renewables. However, the mutual understanding in the form of OPEC+ nations survived the profit margin of OPEC members. The Russia-Ukraine war brought the prominence of OPEC to the forefront, and the production of OPEC+ delineated the fault line that OPEC has with the West. Once guided by the West, OPEC today has more autonomy in its decision-making process. However, the production quota system and 'Saudi hegemony' are the major bones of contention within the OPEC for which the cartel is paying. The shale exploration and its boom in the US promise a lot to meet global requirements, at least in the countries where it is available. However, technological and environmental issues limit growth, and it does not seem that shale will work as an alternative to OPEC, at least shortly. The OPEC cartel is dominant today, although it has no monopoly on the global energy flow.

Climate change and energy poverty are two sides of energy consumption, and it has brought OPEC and IPCC to a debate on oil vs. climate change and renewable options. OPEC has its arguments against the "transition" and "net-zero" emissions as these steps will create

[40] Rizwan Nawaz Researcher in Climate and Water, and Adel Sharif Professor of Water and Process Engineering. "Fossil Fuel Extraction Could Be Contributing to Climate Change by Heating Earth from Within." The Conversation, May 30, 2023. https://theconversation.com/fossil-fuel-extraction-could-be-contributing-to-climate-change-by-heating-earth-from-within-121331

chaos in the energy market. Rapid transition may lead to a shortage of energy resources due to inadequate investment in the oil sector and consequent energy poverty, as there is no potential alternative today and soon. Recognizing the diversity of climate solutions and the concern over emissions without bias towards or against any particular energy source is imperative. The delicate balance between reducing emissions, energy affordability, and energy sustainability requires comprehensive and sustainable policies where all voices will be heard. Focusing on only one of these over the others can lead to unintended consequences: market distortions, heightened volatility, and energy shortfalls. Thus, it is evident that OPEC will have to roll up its sleeves and ensure that it takes cohesive work to consider the climate change challenges. Nevertheless, OPEC today is the foremost cartel in the global energy architecture, and the demand for petroleum will remain at least till the mid-2030s until renewable and new resources are available on a large scale to meet the growing energy demand requirements.

Nevertheless, OPEC's presence in the global market will stay, but significant challenges and changes will evolve with the shifting geopolitical and ecological fronts. The OPEC nations will have to take stock of the situation and make policy changes to build their trust in international energy and remain a dominant force in the coming times.

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