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STUDY GUIDE

Managing Global Dependence on Oil and Gas While Preventing Energy Crises and Economic Instability

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1.Letter from the SG

Dear Delegates,

Welcome to HASMUN’26 our 15th year of leadership, growth, and unforgettable moments.

For fifteen years, HASMUN has been more than just a conference. It has been a place where ideas are challenged, voices are discovered, and individuals grow into leaders. And now, you are a part of that legacy.

Each of you is stepping into a space where your words matter. Where your perspective can shape discussions, influence outcomes, and inspire others. This is not about being perfect it is about being present, prepared, and willing to engage.

As you go through your study guides, remember that they are not just documents. They are your starting point. Go beyond them. Question more. Think deeper. Speak with purpose.
Because what you build here will not only define your experience at HASMUN — it will stay with you long after the conference ends.
This year marks our 15th edition. And that means something.

It means tradition.
It means excellence.
It means responsibility.

And now, it means you.

I look forward to witnessing your journey, your growth, and the impact you will create.

Welcome home.

Nazrin Sadigova
Secretary General
HASMUN’26 | XV Years of Leadership, XV Years of Excellence

2.Letter from the Committee Board

Dear delegates,

Welcome to HASMUN’26 and Global Fossil Energy and Petroleum Council!

We are Selin Ayaz, Cemre Yüksel and, Uğur Cebeci, your committee board members and Altuğ Lokman, your academic assistant. We are having the honor to serve as the board members of this committee.

On behalf of the Committee Board for the GFEPC Committee, we extend our warmest welcome to all delegates. We are thrilled to have you participate in this prestigious Model United Nations conference. This Committee is one of a kind because it was particularly created for this conference. It focuses on critical issues related to the global economy, emphasizing the importance of dialogue and partnership for the energy sector. As delegates, you have a unique opportunity to engage in meaningful debate, negotiation, and problem-solving to address these pressing issues. This study guide contains many prominent information about the agenda while giving an open space for you to also do your own research. Remember, regardless of your country’s position in the agenda, you are all equal in the committee and you have all the resources in your hands to come up with great solutions and innovative ideas to achieve the goals set by the committee.

We wish you all the best in your preparations and look forward to seeing you at HASMUN’26.

3. Introduction to the Committee

The Global Fossil Energy and Petroleum Council is an independent special council and a communication channel that gathers annually. It was founded on the 23th of April to mitigate risks and emergency crises arising from the closure of the Strait of Hormuz, and to ensure the justified and equal allocation of resources transnationally.

The foundation of such a council is also projected to assist in the transition to renewable energy sources from fossil energy, without fluctuations and instability in the global economic systems. Member states can adopt policies implemented by other member states through the provided communication channel, which has shown a positive impact on renewable energy transformation and created alternative energy production methods at risk of a crisis.

The Council mostly acts like an advisory body to the community of the member states. However, while responding to pressing issues and making decisions that affect the rules of the game (like setting the standards for trade or decisions which affect all of the members), the council may enact binding decisions with the consensus of each member.

4. Introduction to the Agenda Item

A. Defining The Fossil Energy Sources

In the beginning of the history of humanity, very basic forms of energy were being used: human muscle, animal muscle, and the burning of biomass such as wood or crops. However, with the rise of the Industrial Revolution in the 1760s in Manchester, England, new kinds of energy sources started to be used commonly: The fossil fuels. They are made from decomposed plant and animal matter. These fuels are found in Earth's crust and contain carbon and hydrogen, which can be burned for energy. There are Three Main Types Of Fossil fuels:

i. Coal:

a. Coal is a combustible(able to catch fire easily) black or brownish-black sedimental rock, formed as layers called coal seams. It mostly consists of Carbon with varying amounts of other elements, such as Hydrogen, sulfur, oxygen, and Nitrogen.

b. The conditions that would eventually create coal began to develop about 300 million years ago, during the Carboniferous period. During this time, Earth was covered in wide, shallow seas and dense forests. These seas caused floods in the forested areas, trapping plants and algae at the bottom of a swampy wetland. Over time, the plants (mostly mosses) and algae were buried and compressed under the weight of overlying mud and vegetation.

c. Coal is extracted either by surface mining, which is the cheaper option, or underground mining. Surface mining is used for extracting coal deposits located relatively close to the earth's surface(less than 60 meters), whereas in underground mining, coal from deep below the earth's surface is extracted, typically when seams are over 60 meters deep. Underground mining currently accounts for about 60% of world coal production[1].

d. The electricity sector continues to drive coal demand, accounting for two-thirds of global consumption.

ii. Petroleum(oil):

a. Petroleum is a yellowish-black liquid. Like coal and natural gas, petroleum was formed from the remains of ancient marine organisms, such as plants, algae, and bacteria.

b. Petroleum consists of a variety of liquid, gaseous, and solid components. Lighter hydrocarbons are the gases methane, ethane, propane, and butane. Otherwise, the bulk of the liquid and solids are largely heavier organic compounds, often hydrocarbons. The proportion of light hydrocarbons in a petroleum mixture varies among oil fields.

c. Petroleum is the raw material of Gasoline, which is widely used in daily life and in almost every industry, especially in transportation, petrochemistry and Agriculture. Petroleum is found in underground pockets called reservoirs. The part of a reservoir's oil-in-place that can be extracted and refined is that reservoir's oil reserves. The decision to invest in complex drilling operations is often made based on a site's proven oil reserves. Drilling can either be developmental, exploratory, or directional.

d. Drilling where there are no known reserves is called exploratory drilling. Exploratory, also called "wildcat" drilling, is a risky business with a very high failure rate. However, the potential rewards of striking oil tempt many "wildcatters" to attempt exploratory drilling. Directional drilling involves drilling vertically to a known source of oil, then veering the drill bit at an angle to access additional resources.

e. On land, an apparatus called oil rig is used to drill oil, whereas offshore, oil is drilled from an oil platform. Most modern wells use an air rotary drilling rig, which can operate 24 hours a day. Pumps are used to extract oil. Most oil rigs have two sets of pumps: mud pumps and extraction pumps. "Mud" is the drilling fluid used to create boreholes for extracting oil and natural gas. Mud pumps circulate drilling fluid[2].

iii. Natural Gas:

a. Natural gas is a fossil fuel formed from the decomposition of plant and animal remains, similar to petroleum and coal. In recent decades, natural gas has seen a growing role in generating power thanks to its availability, accessibility and lower CO2 emissions than the other fossil fuels, petroleum and coal[3].

b. Natural gas that is economical to extract and easily accessible is considered "conventional." Conventional gas is trapped in permeable material beneath impermeable rock. Natural gas found in other geological settings is not always so easy or practical to extract. This gas is called "unconventional." New technologies and processes are always being developed to make this unconventional gas more accessible and economically viable. Over time, gas that was considered "unconventional" can become conventional.

c. Natural Gas is withdrawn from crude oil or natural gas wells is called wet natural gas, because along with methane, it also contains Natural gas liquids, like ethane, propane, butane and pentanes; and water vapor. Natural Gas extracted from wells may also contain non-hydrocarbons such as sulfur, nitrogen, hydrogen sulfide and carbon dioxide, most of it which should be removed before public usage.

d. Natural Gas is transported via wide-diameter transmission pipelines. When natural gas arrives where it will be used through large pipelines, it flows into pipelines that are smaller in diameter called *mains* and then into smaller service lines that go directly into buildings.

e. For shipping and storage, natural gas can be liquified(~160°C) to become Liquefied Natural Gas (LNG), which makes the volume 600 times smaller than its volume in the gaseous form. The liquefaction process makes it possible to transport gas to places where natural gas pipelines do not reach. Most LNG is transported by tankers called LNG carriers in large, on-board, super-cooled tanks. LNG is also transported in smaller International Organization for Standardization-compliant containers that can be placed on ships and on trucks[4].

B. Strategic role of oil in the global energy system

More than 90% of global transportation energy is provided by petroleum. It is high in density, both by weight and volume, and this makes it difficult to replace petroleum with other low-density substances, like hydrogen and batteries.

i. Efficiency of oil:

The production and refining process of oil is relatively efficient compared with other means of energy, like coal or biofuel. Only 25% of production is lost between the well and the fuel pump. However, because of engine and driveline efficiencies, about 85% of the fuel put into an automobile never reaches the wheels, and less than 1% of the car's fuel actually moves the driver[5].

Significance of oil in the global energy system and comparison with other means of energy:

a. Petrol makes up 31.5% of the total energy consumption in the world, making it the biggest source, passing coal(26.1%) and gas(23.5%). Since the 1970's, there has been
a decrease on the share of oil, going from about 50% of total energy consumption to today's rate in 50 years[6].

b. About 50% of oil production is made by five countries: the United States of America, Saudi Arabia, Russia, Iraq, and Canada. Because of this situation, securing access to oil has caused conflicts throughout history.

c. Due to the conflict between the United States and Iran that began on February 28, 2026, and the subsequent closure of the Strait of Hormuz—which accounts for 25% of the world's petroleum trade—there have been fluctuations in the petroleum and gas markets. Oil and Natural gas prices have increased significantly since the war began. Oil prices posted their largest ever Monthly-Gain in March in the wake of the most severe oil supply shock in History, with brent crude features surging more than 60%[7].

C. Fossil Energy Dependence and Its Importance for Global Stability

i. Introduction:

a. Fossil energy dependence means a Country or an economy relying mostly on Fossil fuels for energy production. Since fossil fuels cause CO2 emissions and make nations vulnerable to possible crises, Fossil energy dependence has decreased with the help of the adoption of various renewable energy sources. When global energy security can be upended by a single flashpoint, it shows how unstable and risky our dependence on oil and gas is. Renewable energy provides home-grown power that remains secure and affordable regardless of geopolitical shocks.

b. The seventh Sustainable Development Goal aims to ensure access to affordable, reliable, sustainable, and modern energy for all. Universal access to modern energy, increasing global percentage of renewable energy, doubling the improvement of energy efficiency, promoting access to research, technology, and investments in clean energy, and expanding and upgrading the energy services for developing countries are the primary targets of SDG 7. Though there have been improvements in the access to electricity and cooking fuels, and with renewable energy being the fastest growing energy resource, achieving Goal 7 targets demands substantially increasing clean-energy investments, particularly in developing economies. Without accelerated investments and action, 645 million people will still lack electricity access, and 1.8 billion will lack access to clean cooking in 2030.

5. Historical Background

A. Evolution of Global Oil and Gas Dependency

The world economy today depends very much on oil and gas, but this is actually quite new in human history. It really started to take shape in the late 1800s and early 1900s. The drilling of the Drake Well in Titusville, Pennsylvania in 1859, is usually considered the start of the modern oil industry. It made things change very quickly in factories, transportation, and how people used energy at home (Yergin, 2011). Even though coal was the main fuel during the Industrial Revolution, oil showed it was better because it had more energy, was easier to move, and could be used for many different things. When people invented the internal combustion engine in the 1880s and 1890s, liquid oil became the main fuel for cars and transportation. Before World War I, the military also switched from coal to oil for ships because it was more practical (Smil, 2017). By the early 1900s, oil started to replace coal in many industries, especially after Henry Ford started making cars in large quantities.

Between the two World Wars, oil became very important for national power and security, not just for business. When Winston Churchill, who was First Lord of the Admiralty, changed the British Royal Navy to use oil instead of coal in 1911, it marked a milestone. Now national power was directly connected to having access to oil (Yergin, 2011). In World War II, control of oil supplies was really crucial in Europe and in Asia. The people fighting the war tried to destroy Germany's fuel plants and Japan tried desperately to get oil from the Dutch East Indies, which shows how important oil was for fighting the war (Painter, 1986). After the war finished, Western Europe and Japan had to rebuild. The United States paid for much of this rebuilding through the Marshall Plan, and they specifically chose to use oil from the Middle East instead of coal from local places because it was cheaper and could be supplied in bigger amounts. This choice made oil even more important to industrial economies after the war.

After 1945, oil use grew very fast because of suburbanization, more people buying cars, and new petrochemical industries. One thing that people often miss when they talk about energy is that oil and natural gas became very important for modern agriculture through chemical fertilizers and pesticides. This means that hydrocarbons became part of how humans survive on a basic level, not just for energy production (Smil, 2017). Global oil use went from about 10 million barrels per day in 1950 to over 60 million barrels per day by 1980 (BP, 2022). Natural gas was at first just burned off as waste when people got oil, but slowly it became its own important energy source for making electricity, heating buildings, and factory processes. In the middle of the 1900s, big pipeline networks were built across North America, Europe, and the Soviet Union that helped natural gas become part of energy systems (Stern, 2012). By the end of the 1900s, oil and natural gas together gave about 55 to 60 percent of the world's energy, and this number has stayed about the same into the 2000s (IEA, 2021).

The dependency that developed during this time was not just because of energy economics. It was also because of how world politics were organized and how institutions developed. In the early and middle 1900s, Western oil companies, known together as the "Seven Sisters," made deals to extract oil in the Middle East, North Africa, and Latin America. These agreements set up patterns of how resources were taken out and how money was shared that shaped these countries' politics and economies for many decades (Sampson, 1975). Timothy Mitchell (2011) has argued that fossil fuel infrastructure actually shapes how politics and power work, saying that the way oil can be transported as liquid and the fact that getting it requires a lot of capital spending has allowed certain kinds of government to develop differently than in coal-based societies. Countries that buy oil built their whole systems of highways, suburbs, and plastic factories assuming they would always have cheap oil. As Unruh (2000) explained with the idea of "carbon lock-in," these systems of technology, institutions, and behavior create big barriers to change. The money already spent and the way institutions work make it very hard to move away from fossil fuels even when better options become available.

B. Key Turning Points in Energy Markets

Several key moments have changed global energy markets over the past hundred years. Each one changed the power between countries that sell oil and countries that buy it and showed how fragile depending on hydrocarbons can be. In the early 1900s, Western oil companies called the Seven Sisters basically controlled the whole market. These companies owned oil production, the way it was moved, and the sale of it in the Middle East and Latin America, which meant they controlled global prices and got very good deals from governments (Mitchell, 2011). This power of corporations was stable for Western economies but created serious conflicts about who owns natural resources.

A major change happened in the early 1970s when countries that sell oil, mainly organized through OPEC (Organization of the Petroleum Exporting Countries), successfully took control of their own oil. OPEC was created in 1960 by Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela to work together on how much oil to produce and to keep prices stable, but it was not very effective at first. Then between 1969 and 1976, countries like Libya, Iraq, Algeria, and Saudi Arabia took back ownership of their oil from Western companies. This took apart the whole system that had let Western companies control extraction, prices, and sales for decades (Marcel, 2006). This transfer of who owned the oil changed the structure of the industry completely. Now governments had the power to set prices instead of private companies, and this changed trade between countries permanently.

The Arab oil embargo from 1973 to 1974 was, according to many, the biggest disruption in the history of global energy. In response to U.S. military support for Israel during the October War, the Organization of Arab Petroleum Exporting Countries (OAPEC) stopped selling oil to the United States, the Netherlands, and some other countries. This sudden drop in supply made prices rise from about $3 per barrel to nearly $12 per barrel in just a few months (Hamilton, 2013). Another major turning point came in 1979 with the Iranian Revolution and then the Iran-Iraq War which lasted from 1980 to 1988. The revolution stopped Iranian oil production and removed about 5 million barrels per day from world markets at its worst point. This caused a second oil price shock that pushed prices above $35 per barrel (Yergin, 2011). These two shocks together made governments respond with big changes: more focus on using energy efficiently, trying to get oil from different places, developing oil in the North Sea, Alaska, and Mexico, and building more nuclear power in countries like France and

Japan (IEA, 2021). In 1986, Saudi Arabia decided to flood the market with cheap oil, which made prices drop suddenly. This hurt countries that depended on oil sales, especially the Soviet Union, whose government finances were already weak and this made it worse, which helped lead to the Soviet Union breaking apart (Gaidar, 2007).

At the start of the 2000s, new things happened that changed how energy markets work. China and other countries that were developing very fast created a lot more demand during the commodity boom years, which pushed oil prices to nearly $150 per barrel in July 2008 before it crashed during the global financial crisis (Hamilton, 2009). At the same time, new drilling methods in the United States called hydraulic fracturing and horizontal drilling changed the U.S. from a country that was producing less and less oil to the world's biggest oil producer by the late 2010s (Gold, 2014; Maugeri, 2013). This changed how oil moved around the world, made OPEC less powerful, and created a new type of oil supply that could respond quickly to price changes, which changed how oil prices work in a boom-bust pattern. Most recently, COVID-19 in 2020 made demand for oil drop so much that oil futures prices actually went negative for the first time, and then Russia invaded Ukraine in 2022 which created a sudden shortage of oil and gas that especially hurt Europe's natural gas markets and made countries rethink how they get their energy (IEA, 2022; Bordoff & O'Sullivan, 2022).

C. Previous International Efforts and Agreements

Countries have tried to work together on energy policy in different ways, with mixed results. Often the countries that sell oil and the countries that buy oil have different interests which make cooperation difficult. When OPEC was created in 1960 by countries that sell oil to coordinate production and stabilize prices, it was the first big effort (Skeet, 1988). Over the past sixty years OPEC has changed in how effective it is, but it stayed as the main place where oil-selling countries coordinate, growing to thirteen member states by 2020. In 2016, OPEC+ was formed to include other big oil producers like Russia, Mexico, and Kazakhstan, which expanded coordination especially during COVID-19 when oil demand crashed (Fattouh, 2021).

On the side of oil-buying countries, the IEA (International Energy Agency) was created in 1974 under the OECD to help industrialized countries work together on energy security. Colgan (2009) documented that the IEA's main agreement required member countries to keep emergency oil reserves equal to at least ninety days of what they import and set up ways to release these reserves during supply shortages (IEA, 1974). The IEA has used these reserves a few times, including during the 1991 Gulf War, after hurricanes in 2005, and during the Libya conflict in 2011. But the IEA has criticism because it only includes some rich countries, leaving out huge buyers like China and India, and because it traditionally supported OECD countries' interests (Van de Graaf, 2013).

Other efforts have tried to address energy, development, and how to protect the environment together. The UN Conference on Environment and Development in Rio de Janeiro in 1992 put energy use on the international agenda by connecting it to environmental damage and climate change (United Nations, 1992). The Kyoto Protocol in 1997, even though not all countries joined and enforcement was weak, set up the idea that developed countries should take more responsibility for reducing greenhouse gas emissions from burning fossil fuels (UNFCCC, 1997). The Paris Agreement in 2015 was bigger, with 196 countries agreeing to try to keep global warming below 2 degrees Celsius, with a goal of 1.5 degrees (UNFCCC, 2015). While the Paris Agreement does not say countries have to reduce how much oil and gas they extract, its temperature targets mean less fossil fuel use, which creates conflict with countries that sell oil and gas. What happens is that these climate frameworks clash with the security focus of organizations like the IEA, forcing policymakers to balance climate targets they promised with the immediate need to keep electricity and transportation fuels available and affordable, so the approach to managing oil and gas is often divided and inconsistent (Victor, 2011).

Other institutions have tried to bridge between oil-selling and oil-buying countries. The International Energy Forum (IEF), which exists in its current form since 2003 and is based in Riyadh, is the main place where energy ministers from over seventy countries talk with each other (IEF, 2020). The Joint Organisations Data Initiative (JODI) works under the IEF to try to make global oil and gas market information more transparent and reliable, which addresses a long-standing problem of market uncertainty (Pierru et al., 2018). The G7 and G20 have increasingly included energy security and energy transition in their meetings, recognizing that energy policy needs both traditional developed countries and major developing economies (Downie, 2015). Additionally, multilateral development banks and climate finance mechanisms, including the Green Climate Fund and loss and damage funding set up at COP27 in 2022, have appeared as ways to send money to developing countries dealing with the energy transition, although the money provided is much less than what is actually needed (UNFCCC, 2022). Despite all these institutions, global energy governance stays fragmented, with no single institution having the authority, member countries, or power to coordinate all aspects of energy policy.

D. Past Energy Crises

The history of energy crises shows repeating patterns of supply shortage, bad forecasting, and geopolitical conflict that have caused serious economic and social harm in both oil-selling and oil-buying countries. The 1973 oil crisis from the OAPEC embargo is a typical example. When oil prices quadrupled within months, this created stagflation across industrialized countries. Stagflation is when you have high inflation, rising unemployment, and economic stagnation at the same time, which did not fit with what economists expected at that time (Barsky & Kilian, 2004). In the United States, there were long lines at gas stations, gasoline rationing in several states, and a national speed limit of 55 miles per hour. Beyond the immediate economic shock, the 1973 crisis fundamentally changed how governments in oil-buying countries thought about energy policy and national security. It pushed them to create strategic reserves of oil, fuel efficiency standards, try to get oil from new places, and expand nuclear power (Yergin, 2011).

The second oil shock from 1979 to 1980, caused by the Iranian Revolution and made worse by the Iran-Iraq War, created costs that were in some ways more damaging than the first crisis. Oil prices more than doubled in real terms, and the recession from 1980 to 1982 was the worst since the Great Depression (Hamilton, 2013). Central banks in the United States and United Kingdom responded by tightening money supply aggressively, which was especially bad for developing countries that sold other commodities and had borrowed in dollars. The Latin American debt crisis of the 1980s had many causes but was made worse by high interest rates and volatile commodity prices after the second oil shock. This shows how energy crises in rich countries can hurt poor countries through financial channels (Sachs, 1989). The 1979 crisis also produced lasting changes in energy: France built many nuclear power plants, Japan focused on energy efficiency, and OECD countries moved away from industries that used lots of oil, all because of responses to this price shock.

The 1990 to 1991 Gulf Crisis, when Iraq invaded Kuwait, temporarily removed about 4.3 million barrels per day from world markets and made prices jump from about 17 to 36 per barrel between August and October 1990 (Kilian, 2008). Although prices recovered faster than in the 1970s because Saudi Arabia increased production and the IEA released strategic reserves, the crisis showed how fragile the oil infrastructure in the Persian Gulf is. When retreating Iraqi forces deliberately destroyed Kuwaiti oil wells, this caused massive environmental damage and reduced Kuwait's oil production for several years, showing that energy infrastructure can become a target in war (Al-Damkhi et al., 2009).

More recent energy crises look different because markets have changed. The 2007 to 2008 price surge, when oil went from about 70 to nearly 150 per barrel before crashing below $40 during the global financial crisis, highlighted how financialization and speculation can make price swings bigger. Tang and Xiong (2012) showed that more institutional investors, hedge funds, and index tracking funds joined oil futures markets in the early 2000s, adding another layer of complexity to how prices form, sometimes making financial prices separate from actual supply and demand (Fattouh et al., 2013). Most critically, the European natural gas crisis from 2021 to 2022 started when Russia reduced and then stopped sending pipeline gas to much of Europe after invading Ukraine. This was the worst energy security crisis in Europe since the 1970s. European natural gas prices went up more than tenfold from before the crisis, leading to factory shutdowns, energy poverty for regular people, and emergency government spending across the EU. Governments had to give huge subsidies for utility costs and even some European states temporarily went back to using coal for electricity (Fulwood, 2022; Bordoff & O'Sullivan, 2022). These crises always show that dealing with immediate shortages of energy is more important than long-term plans to move away from fossil fuels when supply is suddenly threatened.

6. Current Situation

A. Major Oil and Gas Producing Countries

The world today has three big oil and gas producers, the United States, Saudi Arabia, and Russia, each making between 10 to 13 million barrels of oil per day depending on market conditions and voluntary production cuts (EIA, 2023). These three countries together make about 40 percent of global oil. But the way each country owns and controls production is very different, which means they respond differently to price changes. In the United States, oil production from shale basins like the Permian, the Bakken, and the Eagle Ford responds mainly to price signals and private company investment decisions. In Saudi Arabia and Russia, state-owned companies control production and use oil exports as their main source of government money and geopolitical power (IEA, 2023). The U.S. became the world's biggest producer through shale drilling, with production growing from about 5 million barrels per day in 2008 to over 12 million barrels per day by 2023 (EIA, 2023). But shale oil production has high decline rates and needs lots of capital, making it more sensitive to price changes than conventional Middle Eastern oil.

Saudi Arabia is the most strategically important producer because it has the world's largest spare production capacity, estimated at 1.5 to 2.5 million barrels per day, which allows it to be the global swing producer (Fattouh, 2021). The Kingdom's state oil company, Saudi Aramco, controls proven reserves estimated at about 259 billion barrels, the second largest after Venezuela, although Saudi reserves are generally easier to extract economically (Saudi Aramco, 2023). Saudi Arabia's leadership in OPEC and the broader OPEC+ alliance gives it outsized influence over global oil supply. This spare capacity works like a market stabilization buffer: when geopolitical problems or demand shocks threaten price stability, Saudi Arabia's ability to quickly increase or decrease output provides a cushion that no other producer can match. The Kingdom's Vision 2030 economic diversification program, launched in 2016, acknowledges that in the long term the government needs to reduce its dependence on oil revenues, yet oil exports continue to be about 60 to 70 percent of government money (IMF, 2023).

Russia, the world's third-largest oil producer and second-largest natural gas producer, has a special place in global energy because it historically exported to both Europe and Asia. Before the 2022 invasion of Ukraine, Russia supplied about 40 percent of the EU's natural gas and roughly 25 percent of its crude oil (Eurostat, 2022). The Western sanctions imposed after the invasion, including the EU ban on Russian sea-based crude oil and the G7 price cap, have significantly disrupted these trade flows, redirecting lots of Russian crude to China, India, and Turkey at discounted prices (IEA, 2023). This redirect is a live example of how sanctions work together with global energy market adaptation, with long-term implications for Russia's finances and the structure of global oil trade that people are still studying and debating.

Beyond these three big producers, the broader OPEC+ alliance plus other emerging energy powers continues to influence the marginal barrel. Iraq, the second-largest OPEC producer with output of about 4.5 million barrels per day, has some of the lowest production costs globally but struggles with political instability, old infrastructure, and disputes between federal and regional governments over revenue sharing with the Kurdistan Region (Marcel, 2006). Qatar has used its enormous North Field gas reserves to become the world's leading exporter of liquefied natural gas (LNG), which has become more strategically important as European countries searched for alternatives to Russian pipeline gas. Australia has similarly emerged as a major LNG exporter, and together with Qatar, these two countries are driving expansion of global LNG capacity and securing long-term supply contracts with both European states and Asian economies needing fuel for industrialization. Brazil's deepwater discoveries in the Santos Basin have positioned it as a growing source of global oil, with production exceeding 3 million barrels per day by 2023 (Petrobras, 2023). The fact that reserves and production are concentrated in politically unstable regions continues to be a structural weakness in the global energy system, making sure that regional domestic policies, local conflicts, and infrastructure problems become global supply risks.

B. Economic Implications

The economic implications of global dependence on oil and gas are deeply structural and have far-reaching influence beyond the energy sector alone. They permeate virtually every dimension of the modern economy, stretching from consumer price levels and government fiscal balances to industrial competitiveness, currency valuations, and long-term development trajectories. Oil and gas are not merely commodities but the building blocks of the modern economy. This structural condition means that fossil fuel dependence cannot be isolated to economic consequences alone and requires comprehensive policy tools that account for the interconnected nature of global markets, national fiscal structures, and international financial systems.

i. Oil Prices and Macroeconomic Volatility

The extreme vulnerability of world economies to changes in oil and gas prices is arguably the most obvious and politically significant economic consequence of reliance on fossil fuels. This sensitivity is structural rather than incidental, resulting from the fact that oil provides an input to an incredibly broad spectrum of economic activity. It serves as a feedstock for polymers, fertilizers, pharmaceuticals, and thousands of other industrial items in addition to being the fuel used to run cars and heat houses. Since energy expenditure is a necessary component of the manufacturing, processing, and distribution of practically all goods and services, when the costs of these fundamental commodities rise significantly, so does the cost of almost everything else in the economy. Cost-push inflation is the term used in economics to describe this relationship between rising energy prices and generalized inflation. It is one of the hardest types of inflationary pressure for policymakers to control because it originates outside the domestic economy and cannot be resolved simply by adjusting interest rates or fiscal policy.

The historical record of oil price shocks and their macroeconomic consequences is both comprehensive and instructive. The most often cited example is the Arab oil embargo of 1973, when OPEC members stopped exporting oil to countries that had backed Israel in the Yom Kippur War. In a matter of months, the price of crude oil quadrupled from about three dollars per barrel to more than twelve. Western economies were immediately and severely impacted, with stagflation taking hold across the United States, Western Europe, and Japan as inflation skyrocketed, industrial output shrank, and unemployment increased. The long postwar boom was essentially halted by the 1973 shock, marking the beginning of a decade of economic instability throughout the developed world. A similar process took place after the Iranian Revolution of 1979, which caused a second significant price shock that contributed to severe recessions across many industrialized economies in the early 1980s. The steep drop in oil prices in 1986 after Saudi Arabia significantly expanded output demonstrated that price volatility in both directions carries economic consequences, as the crash devastated oil-exporting economies and contributed to the fiscal collapse of the Soviet Union, whose government budget depended heavily on oil export earnings.

More recently, the post-COVID-19 energy price surge of 2021 and 2022 revealed uncomfortably that these structural vulnerabilities remain unresolved. Oil and gas prices skyrocketed as economies reopened after pandemic lockdowns because energy demand rebounded faster than supply could keep up. The situation in Europe grew more severe in 2022 following Russia's full-scale invasion of Ukraine and the Western sanctions on Russian energy exports. European natural gas prices, which had previously traded at a fraction of Asian or American levels due to pipeline access from Russia, reached previously unheard-of heights. Governments throughout the European Union were compelled to allocate hundreds of billions of euros in emergency energy subsidies, resulting in a significant and largely unforeseen strain on public finances. Germany suffered a particularly severe crisis when its industrial base, built on the assumption that Russian gas would be dependable and affordable, had to abruptly reorganize supply chains and absorb sharply increased energy costs. Energy-intensive industries including fertilizer production and glass manufacturing either reduced operations or began moving production capacity outside of Europe altogether.

Oil price volatility is therefore not an exception but a recurring structural feature of a global economy organized around fossil fuel dependence. Every cycle of price shock, economic upheaval, and eventual stabilization leaves behind residual harm, including closed businesses, abandoned investments, depleted public finances, and lowered living standards for households. The total cumulative economic cost of this volatility across all the crises of the last fifty years represents one of the biggest and most underestimated financial burdens of the current energy system.

ii. Petrodollar Dynamics and Currency Exposure

The US dollar is the basis of oil trading. This connection began after the Bretton Woods system collapsed in the 1970s, when the US and Saudi Arabia made a deal in which oil would be sold exclusively in dollars in exchange for American security guarantees. This arrangement is known as the petrodollar system, and it has had a significant impact on how financial power is distributed around the world. Understanding fossil fuel dependence therefore requires looking beyond energy itself to how money and power work together globally.

The most direct consequence of the petrodollar system is that countries which import large amounts of oil must accumulate sufficient US dollars to finance their purchases, creating persistent global demand

for the dollar and reinforcing its status as the world's primary reserve currency. This gives the United States a powerful advantage, allowing it to borrow money at lower interest rates than other countries and maintain trade deficits without getting into financial trouble. When the US makes decisions about interest rates, it can affect oil prices immediately and impact oil-importing countries even when those decisions are made purely in response to domestic American economic conditions.

When oil prices skyrocket, it can be especially tough for developing countries that rely on importing oil. Their currencies often weaken against the dollar at the same time, making oil even more expensive to buy in local currency terms. This leads to a kind of imported inflation where people's real incomes go down, they have less money to spend, and in severe cases it can trigger currency crises if the country lacks sufficient foreign exchange reserves. Countries like Sri Lanka, Pakistan, and several nations in Sub-Saharan Africa have faced serious financial struggles directly worsened by high oil import bills, showing that this is not a theoretical problem but one that concretely affects people's lives.

For oil-exporting nations, the petrodollar system generates a different but equally significant set of distortions. Economists have extensively documented the phenomenon known as the "resource curse" or "Dutch disease," in which substantial resource revenues paradoxically fail to translate into broad-based, sustainable development. Large inflows of oil export revenues cause a country's currency to appreciate, making its non-oil export sectors such as manufacturing or agriculture less competitive internationally. Over time, these sectors atrophy as investment flows toward the more profitable resource sector, leaving an economy that is highly productive in extracting one commodity but structurally underdeveloped in the diversified sectors that generate sustainable long-term growth. When oil revenues eventually decline, these economies find themselves without the industrial base needed to sustain the living standards their populations have come to expect.

The political consequences of oil wealth compound these economic distortions. When a government derives most of its revenue from oil rather than from taxing citizens and businesses, the normal accountability relationship between the state and society weakens. Taxation creates pressure for representation, but when a government does not need to tax its people heavily, it does not need to listen to them as closely either. This can lead to more authoritarian governance, with oil money used to reward political allies rather than being invested in institutions like the rule of law and an independent judiciary that are essential for long-term economic success. Countries like Saudi Arabia, Venezuela, Nigeria, Angola, and Libya illustrate how substantial oil wealth can coexist with significant poverty, inequality, and weak institutions.

iii. Fiscal Dependency of Producing Nations and Budget Vulnerabilities

Many major oil and gas exporting countries have built national budgets that rely heavily on hydrocarbon revenues, making them inherently fragile in the face of price changes. In Saudi Arabia, oil sales have historically made up about 60 to 70 percent of government income, and although the country's Vision 2030 plan aims to diversify the economy, oil remains dominant. In Russia, energy exports continue to be the primary source of federal revenues and foreign exchange earnings despite long-standing diversification rhetoric. Iraq is in an even more precarious position, with oil revenues accounting for over 90 percent of government income, leaving the state almost entirely at the mercy of global market conditions it cannot control. Kuwait, Abu Dhabi, and Libya are in similar situations, all heavily dependent on oil sales to fund their governments.

When oil prices drop, the consequences for these governments are immediate and severe. The sharp price decline of 2014, caused by the American shale revolution flooding global markets with supply, forced governments across the Gulf region to draw down savings, cut infrastructure spending, reduce public sector wages, and in some cases introduce taxes for the first time in their histories. In Russia, the combination of low oil prices and Western sanctions triggered a deep recession in 2015 and 2016, with the economy contracting and the ruble losing nearly half its value. In Venezuela, the oil price collapse accelerated a catastrophic economic disintegration marked by hyperinflation, mass emigration, and the collapse of basic public services, all ultimately traceable to a government that had relied too heavily on oil money to fund its welfare state.

The political consequences of these fiscal adjustments can be severe. Governments that have built popular support through oil-financed subsidies and public employment find that cutting these entitlements generates social unrest and political instability. The Arab Spring uprisings of 2010 and 2011 were significantly inflamed by the inability of governments in Tunisia, Egypt, and Libya to maintain the economic promises they had built partly on hydrocarbon revenues. Countries that fail to diversify during periods of high oil prices are essentially accumulating political as well as fiscal risk, which eventually materializes when prices fall.

Beyond individual country vulnerabilities, the fiscal dependence of major producers has broader implications for global stability. When these countries face financial pressure, they often respond by increasing production to compensate for lower prices through higher volume, which can deepen the price decline further. This is exactly what happened during 2014 and 2016 when Saudi Arabia maintained and even increased production to preserve market share, worsening the situation for all producers simultaneously. The IMF has repeatedly warned that many oil-dependent economies require significantly higher prices to balance their national budgets, and that this gap is likely to widen as the global energy transition progresses and long-term demand growth slows.

iv. Impact on Energy-Importing Developing Economies

While oil-rich nations face challenges from dependence and volatility on the supply side, the burdens on energy-importing developing economies are frequently more severe, more immediate, and less amenable to domestic solutions. Countries in Sub-Saharan Africa, South and Southeast Asia, and parts of Latin America that rely heavily on imported oil and gas are exposed to price shocks over which they have no control and possess extremely limited capacity to absorb, given their constrained fiscal positions and limited access to international capital. The consequences can set back years or even decades of hard-won economic progress.

When a country has to pay more for energy imports, it has less money for other essential needs like medicine, food, and equipment. When oil prices spike, governments face difficult choices: they can maintain energy imports at the expense of other critical goods, impose painful fuel price increases that risk social unrest, or seek emergency support from institutions like the IMF, which typically comes with conditions that limit domestic policy options. All of these choices are costly, and none address the underlying vulnerability. Countries like Ghana, Kenya, and Bangladesh have repeatedly faced serious financial pressures directly linked to energy import costs, demonstrating that this is a systemic constraint on development rather than an occasional inconvenience.

A deeply paradoxical feature of the global fossil fuel economy is that it creates excessive dependence in wealthy nations while leaving enormous numbers of people in the developing world without access to modern energy at all. The IEA estimates that around 775 million people lacked electricity in the early 2020s, the vast majority in Sub-Saharan Africa and developing Asia. For these populations, the lack of affordable energy prevents economic activity, reduces educational and health outcomes, and limits connectivity to global markets. Any governance framework developed by the GFEPC that focuses exclusively on the concerns of large industrialized consumers without addressing this energy access deficit will be both morally inadequate and politically unsustainable.

Food security is another dimension of this problem that is often overlooked. Modern agriculture relies heavily on petroleum-derived fertilizers, diesel-powered machinery, and fossil fuel-dependent supply chains for transportation and refrigeration. When oil prices jump, food prices tend to follow, and the people most affected are overwhelmingly in low-income countries. The 2007 and 2008 food price crisis, in which global food prices reached historic highs largely driven by rising energy costs, led to social unrest and hunger crises across dozens of developing countries, illustrating that the consequences of oil price volatility extend well beyond the energy sector itself.

v. The Cost of Energy Subsidies and Market Distortions

Governments worldwide spend enormous sums subsidizing fossil fuels, creating market distortions that strain public finances, encourage wasteful consumption, and make it harder for clean energy to compete. The IMF has estimated that total fossil fuel subsidies, including both direct budgetary support that reduces the price consumers pay and the implicit costs of unpriced harms like air pollution and climate change, amount to several trillion dollars annually. In 2022, the IMF put the total figure at approximately $7 trillion, or about 7.1 percent of global GDP, surpassing what many countries spend on education or healthcare combined.

Governments usually justify these subsidies in a few ways. In many developing countries, fuel subsidies are framed as social protection that keeps energy affordable for low-income households. In oil-producing nations, domestic subsidies are often presented as a way to share resource wealth directly with citizens. In some industrialized economies, subsidies take the form of favorable tax treatment for fossil fuel companies, defended as supporting energy security and domestic employment.

Regardless of the justification, the economic and environmental consequences are largely negative. Artificially low fuel prices reduce the incentive for consumers and businesses to use energy efficiently, keeping demand for fossil fuels higher than it would be under market pricing. They also weaken the competitiveness of renewable energy alternatives, slowing the pace of the energy transition. Subsidy reform is economically rational and widely recommended by international financial institutions, but it is politically very difficult to carry out. When governments attempt to reduce subsidies, they frequently face strong public opposition, sometimes violent, as seen in Indonesia, Nigeria, Egypt, and Ecuador. The political obstacles to reform are so significant that governments are often forced to reverse their decisions, leaving subsidies in place and prolonging dependence on fossil fuels.

A further problem is that fuel subsidies are typically delivered through below-market retail prices rather than targeted transfers to low-income households. As a result, the largest financial benefit tends to go to wealthier households that consume more fuel, rather than to the poor who ostensibly justify the policy. This means that subsidy programs often fail to achieve their stated social goals while imposing a large and regressive fiscal cost, representing a simultaneous failure of both efficiency and equity.

vi. Transition Costs, Stranded Assets, and Financial System Risks

As the global economy gradually shifts toward cleaner energy, the economic implications of fossil fuel dependence extend into the future in the form of what financial analysts increasingly call "transition risks." These arise from the possibility that changes in climate policy, technology, and consumer behavior will reduce the value of fossil fuel assets faster than investors currently anticipate, creating financial losses that could destabilize parts of the global financial system.

The concept of "stranded assets" is central here. These are assets that lose their economic value before the end of their expected lifespan because demand falls, regulations change, or cheaper alternatives emerge. In the context of fossil fuels, stranded assets include oil and gas reserves that may never be extracted under stricter climate policies, pipelines and refineries that may operate well below capacity, power plants that get shut down prematurely, and LNG terminals whose long-term demand projections may prove too optimistic. The total value of potentially stranded assets runs into many trillions of dollars globally and represents a serious financial risk for companies, investors, and entire national economies that are heavily capitalized in fossil fuel infrastructure.

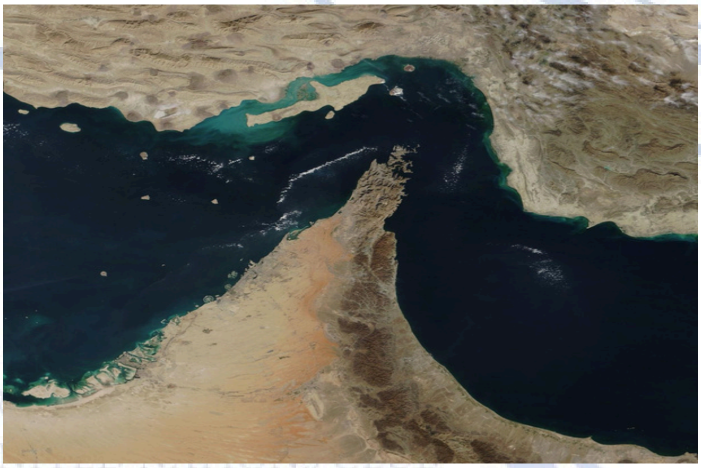
The financial system's exposure to these risks is substantial. Banks, insurance companies, pension funds, and sovereign wealth funds all hold significant positions in fossil fuel companies and infrastructure, either directly or through complex financial instruments. If the value of these assets declines rapidly and simultaneously, the resulting losses could trigger credit contractions and broader financial instability. Both the Bank of England and the European Central Bank have conducted analyses suggesting that, under certain transition scenarios, losses from stranded fossil fuel assets could be large enough to constitute a systemic financial risk.

Managing this transition is complicated by the long investment horizons of the energy sector. Oil and gas infrastructure is expensive, takes years to build, and is designed to operate for 30 to 40 years or more. Decisions made today will therefore shape the energy system for decades. If investment in fossil fuel infrastructure continues at current rates, it will lock in emissions trajectories inconsistent with the Paris Agreement targets. But if investment is withdrawn too abruptly without sufficient replacement in clean energy, the result may be energy shortfalls, price spikes, and the kind of economic disruption the GFEPC is specifically mandated to prevent. Navigating this challenge requires careful coordination between governments, regulators, financial institutions, and energy companies, and the governance frameworks developed within bodies like the GFEPC will be critical in determining whether this transition unfolds in a managed and equitable way.

vii. Global Trade, Supply Chains, and the Energy-Economy Nexus

The relationship between fossil fuel dependence and the structure of global trade and supply chains is a further dimension of the economic implications that deserves attention. Modern global trade depends overwhelmingly on maritime shipping powered primarily by heavy fuel oil, aviation almost entirely dependent on petroleum-derived jet fuel, and road freight that is similarly diesel-dependent. The entire architecture of global economic integration, which has produced enormous gains in productivity and development over the past several decades, is therefore structurally dependent on affordable and reliable access to petroleum products.

When there is a disruption to the oil supply or a sudden jump in prices, the effects spread quickly throughout the entire global supply chain. Higher shipping costs raise the delivered price of goods at their destination.



Manufacturers facing higher energy costs must either absorb reduced margins, pass costs on to consumers through higher prices, or reduce output. Just-in-time manufacturing systems, which have been optimized over many years to minimize inventory under assumptions of affordable and reliable transportation, are particularly sensitive to energy cost shocks. The COVID-19 pandemic demonstrated how fragile global supply chains can be under stress, and energy price shocks superimposed on already strained networks can amplify these fragilities significantly.

The world's oil trade is also concentrated through a small number of geographic chokepoints that represent serious vulnerabilities. Approximately 20 percent of all globally traded oil passes through the Strait of Hormuz at the entrance to the Persian Gulf, making it the single most critical point in the global energy system. Significant volumes also transit the Strait of Malacca, the Suez Canal, and the Turkish Straits. Any military conflict, blockade, or infrastructure attack affecting these locations would immediately disrupt global oil supply in ways that existing strategic reserves are unlikely to fully offset. The fact that the global trading system is so exposed to these few geographic points is itself a consequence of fossil fuel dependence, and it directly connects energy governance to maritime security, military strategy, and international diplomacy in ways that will persist until the energy transition reduces the need to physically move vast quantities of combustible fuel across the world's oceans.

C. Environmental and Sustainability Concerns

The environmental implications of global dependence on oil and gas are among the most pressing challenges of the twenty-first century. While the economic consequences of fossil fuel dependence are serious and demand urgent attention, the environmental consequences are, in many respects, even more fundamental, because they threaten the long-term stability of the planetary systems upon which all human activity ultimately depends. The atmosphere, the oceans, the freshwater cycle, and the biodiversity networks that sustain life on Earth are not separate from the economy; they are its very foundation. When these systems are destabilized, the consequences ripple through every dimension of human welfare in ways that are often impossible to reverse. Understanding the environmental dimension is therefore not a side issue for delegates of the GFEPC; it is central to any serious approach to managing global fossil fuel dependence. The scientific evidence documenting this harm is extensive and consistent, produced by research institutions across the world over several decades. What remains in dispute is not the nature of the harm, but how the response should be governed. That is precisely what the GFEPC is convened to address.

i. Climate Change, Greenhouse Gas Emissions, and the Carbon Budget

The burning of oil and natural gas releases carbon dioxide and other greenhouse gases into the atmosphere, where they trap heat and progressively raise the planet's average surface temperature. The Intergovernmental Panel on Climate Change, which represents the most authoritative collective assessment of climate science available, has established with unequivocal confidence that human-caused greenhouse gas emissions are the primary driver of observed global warming since the mid-twentieth century. Nearly three-quarters of all human-caused emissions over the past two decades have come directly from burning fossil fuels, with oil and gas accounting for a substantial and growing share.

The physical consequences of warming that are already being observed are wide-ranging. The melting of ice sheets in Greenland and Antarctica and of mountain glaciers worldwide is contributing to sea level rise that threatens coastal cities, agricultural land, and small island nations. Cities like Miami, Jakarta, Mumbai, Shanghai, Amsterdam, and Dhaka face potentially catastrophic consequences from even moderate sea level rise, especially when combined with more intense storm surges. Beyond sea level, climate change is also intensifying the water cycle, making floods more severe in some regions and droughts worse in others.

ii. Methane Emissions, Natural Gas, and the Short-Term Climate Crisis

Natural gas has been seen as a cleaner option than coal for a long time, and many governments have supported it as a way to move towards a future with lower carbon emissions. But it's getting harder to justify this view. Methane, which is the main part of natural gas, is a much more powerful greenhouse gas than CO_2, at least in the short term, and it escapes all along the supply chain in amounts that governments and companies have often underestimated. For years, the international community has had access to affordable solutions to this problem, but failures in regulation and a lack of political will have prevented these solutions from being widely adopted. What's even more worrying is that, following the war in Ukraine, many countries are now quickly signing long-term contracts for liquefied natural gas (LNG) and building new gas infrastructure, which will keep them dependent on fossil fuels for decades. For an organization like the GFEPC, this is not just an environmental problem, but also a failure of governance, and it requires coordinated action from countries around the world, rather than the individual decisions that have led us to this point.

iii. Oil Spills, Pipeline Leaks, and Localized Environmental Catastrophe

Beyond the global atmospheric dimension, the extraction, transportation, and refining of oil and gas carry direct and often catastrophic consequences for local ecosystems. These localized harms are frequently underweighted in international climate discussions, but they represent devastating and often irreversible damage to natural systems and the communities that depend on them.

Large-scale oil spills are among the most well-documented forms of environmental damage associated with fossil fuels. The 1989 Exxon Valdez disaster saw a tanker run aground in Prince William Sound off Alaska, releasing approximately 11 million gallons of crude oil. The spill contaminated around 1,300 miles of coastline and killed hundreds of thousands of seabirds, thousands of sea otters, and large numbers of killer whales and bald eagles. Indigenous Alaskan communities that had depended on those waters for generations saw their way of life devastated. The 2010 Deepwater Horizon disaster in the Gulf of Mexico was even larger in scale, killing eleven workers and releasing an estimated 4.9 million barrels of crude oil over 87 days. Around 1,100 miles of shoreline were oiled, fisheries were closed for extended periods, and long-term studies have documented persistent damage to marine life and coastal vegetation. The disaster also exposed serious weaknesses in regulatory oversight, including the regulatory capture of government agencies by the industries they were meant to oversee.

Perhaps the most persistent and underreported catastrophe linked to fossil fuel extraction is the ongoing degradation of the Niger Delta in Nigeria. Over six decades of oil extraction, the region has experienced thousands of spills from pipeline corrosion and equipment failure. A 2011 UNEP assessment found soil and groundwater contamination so severe that it would require up to 30 years of active remediation to recover from, with drinking water containing benzene at levels exceeding WHO safety standards by up to 900 times. The fact that this receives far less international attention than spills in wealthy countries reflects a troubling inequality in whose environments are considered worth protecting. Beyond these dramatic events, routine operations also cause significant harm through flaring and the improper disposal of contaminated water brought to the surface during extraction.

iv. Air Pollution, Public Health, and the Urban Environment

The combustion of oil and gas in vehicles, power plants, industrial facilities, and heating systems releases not only CO_2 but also a range of local air pollutants with severe and well-documented consequences for human health. These include nitrogen oxides, sulphur dioxide, carbon monoxide, fine particulate matter, ground-level ozone, and toxic compounds such as benzene and formaldehyde, affecting the respiratory, cardiovascular, and neurological systems most severely.

The WHO estimates that ambient air pollution, to which fossil fuel combustion is the dominant contributor, causes approximately 4.2 million premature deaths annually. When indoor pollution from cooking and heating with solid fuels and kerosene is included, the total rises to approximately 7 million premature deaths per year, making air pollution the world's largest single environmental health risk, comparable in scale to tobacco smoking or malnutrition. The diseases directly linked to air pollution include lung cancer, chronic obstructive pulmonary disease, ischemic heart disease, stroke, and acute respiratory infections in children, with a growing body of evidence also linking it to cognitive impairment in children and dementia in adults. The burden of these conditions falls disproportionately on those least responsible for the emissions that cause them: urban residents in low and middle-income countries, where industrial sources, vehicle emissions, and cooking fuel combustion combine with weak regulatory enforcement.

Urban air quality is of particular importance given that more than half of the world's population now lives in cities, and urbanization is set to continue rapidly in Africa and Asia. Major cities including Delhi, Lahore, Dhaka, Karachi, Beijing, and Cairo regularly record air quality levels in the hazardous range. Children growing up in these environments suffer measurable reductions in lung development and documented harm to cognitive development and educational attainment. The European shift toward diesel vehicles, justified on climate grounds because diesel produces less CO_2 per kilometer than petrol, had the perverse consequence of worsening urban air quality by increasing nitrogen oxide and particulate emissions, a policy failure that illustrates why single-metric approaches to energy governance tend to be insufficient.

v. Biodiversity Loss, Ecosystem Degradation, and Habitat Destruction

The construction of fossil fuel infrastructure, including extraction facilities, pipelines, roads, refineries, and storage sites, inevitably transforms natural landscapes and disrupts the ecological communities that inhabit them. Combined with the indirect effects of climate change and pollution, these impacts contribute to a global biodiversity crisis that scientists have described as the sixth mass extinction event in Earth's history. Biodiversity loss is not merely an ethical concern; it undermines the functioning of ecosystems that provide essential services including food production, water purification, flood protection, pollination, and disease control, with long-term economic consequences that are routinely omitted from conventional energy cost-benefit analyses.

The expansion of fossil fuel extraction into previously undisturbed areas is a major driver of habitat loss globally. In the Amazon basin, road and pipeline construction associated with oil development in Ecuador, Peru, and Brazil has opened previously inaccessible forest to agricultural colonization, logging, and cascading deforestation, generating massive greenhouse gas emissions and largely irreversible biodiversity loss in ecosystems that harbor extraordinary concentrations of species found nowhere else. The Arctic presents similarly acute concerns, as warming opens previously ice-covered areas to oil and gas exploration, threatening ecosystems that evolved in isolation from large-scale industrial activity and providing critical habitat for migratory species and indigenous communities.

The marine environment is especially vulnerable. Coral reefs, which cover less than one percent of the ocean floor but support approximately 25 percent of all marine species, are under severe stress from warming and acidification. The Great Barrier Reef has experienced four major bleaching events since 2016, and coral cover has declined by approximately half over the past four decades. If warming reaches 2 degrees Celsius, models project that 99 percent of coral reefs will face annual bleaching, effectively eliminating them as functioning ecosystems and devastating the fisheries that hundreds of millions of people depend on. Mangrove forests, which protect coastlines from storm surge, store carbon at exceptionally high rates, and support juvenile fish populations, have similarly been reduced significantly by coastal development, pollution, and sea level rise associated with fossil fuel-driven climate change.

vi. The Tension Between Sustainability and Development

One of the most politically charged and practically consequential aspects of the environmental dimension is the fundamental tension between the urgency of reducing emissions for global sustainability and the legitimate developmental needs of countries that have not yet achieved adequate energy access or economic security. This tension sits at the heart of international climate governance and cannot be resolved by technical prescriptions that ignore the historical and ethical dimensions of global inequality.

The historical argument is straightforward. The greenhouse gas emissions now driving climate change are overwhelmingly the product of industrialization in wealthy countries over the past 150 to 200 years. The United States, Western Europe, and Japan built their prosperity through largely unregulated fossil fuel combustion at a time when the atmospheric consequences were not yet understood, and their per capita cumulative historical emissions are many times greater than those of the developing world. Developing countries are now being asked to abandon the same developmental pathway that made wealthy nations wealthy, in order to address a problem that wealthy nations created. Around 775 million people currently lack access to electricity, and several billion more lack clean cooking fuels, relying instead on biomass, charcoal, or kerosene. For these populations, access to affordable modern energy is a basic developmental necessity required for the functioning of health clinics, schools, and small businesses. Demanding that developing countries leap directly to renewable systems without adequate financial support and technology transfer, while wealthy countries spent decades building economies on fossil fuel infrastructure, is both practically difficult and morally questionable.

The international climate finance architecture meant to address this tension has proven significantly inadequate. Wealthy countries pledged in 2009 to mobilize $100 billion per year in climate finance for developing nations by 2020, a target that was not fully met and which many analysts argue falls far short of actual needs. Beyond mitigation, the adaptation dimension deserves equal attention. Even if all emissions stopped today, the climate change already locked in by historical emissions will continue to intensify for decades. The communities most exposed to this locked-in warming are overwhelmingly in developing countries that contributed least to causing it. The concept of loss and damage received formal recognition at COP27 in 2022, where a dedicated fund was established, but its funding and governance remain deeply contested, reflecting the persistent difficulty of translating recognition of injustice into adequate remedial action.

vii. Ocean Acidification, Permafrost Thaw, and Tipping Points in the Earth System
Beyond the impacts most widely discussed in climate policy debates, scientists have identified a set of large-scale Earth system processes that warrant special concern because they can generate self-reinforcing feedbacks capable of amplifying climate change far beyond current projections. These are sometimes called climate tipping points: thresholds that, once crossed, may trigger changes that are largely irreversible on human timescales. The potential costs of slow action are not merely proportionally higher than those of fast action; they may be categorically different in kind.

Ocean acidification is one of the most directly measurable of these consequences. As the oceans absorb approximately 25 to 30 percent of all human CO_2 emissions, the dissolved gas reacts with seawater to form carbonic acid, lowering the pH of ocean water. Since the industrial revolution, average surface ocean pH has declined from approximately 8.2 to 8.1, and even this modest shift can impair the ability of marine organisms including corals, molluscs, and plankton to form shells and skeletons, alter their reproduction, and reduce their survival rates. Pteropods, small sea snails that form a critical component of the food web in polar oceans, have already been found with dissolving shells in the Southern Ocean, demonstrating that acidification is not a future threat but a present reality. Permafrost thaw represents perhaps an even more significant feedback. Permafrost underlies approximately a quarter of the Northern Hemisphere's land surface and contains an estimated 1.5 trillion tonnes of organic carbon. As warming causes it to thaw, this carbon is released as CO_2 and methane, causing further warming and further thaw. Current estimates suggest this feedback could release an additional 150 to 200 billion tonnes of CO_2 equivalent by 2100, and the critical concern is that once this process begins at sufficient scale, it may become self-sustaining even if human emissions are reduced.

The potential destabilization of the West Antarctic and Greenland ice sheets presents a further tipping point. Both contain enough ice to raise global sea levels by several meters, and recent research suggests that certain sectors may be approaching or have already passed thresholds beyond which significant sea level rise is unavoidable. Sea level rise of even one to two meters this century would require the relocation or protection of coastal cities and agricultural land at a scale that would represent the largest adaptation challenge in human history, and preventing such outcomes requires the fundamental transformation of the global energy system that the GFEPC's mandate exists to support and govern.

7. Threats and Challenges Upon the Topic

A. Technological Barriers

Technological limitations are one of the biggest problems with reducing the world's reliance on oil and gas. Even though solar, wind, and hydroelectric power are growing quickly, they are unable to yet fully replace fossil fuels. The infrastructure that is already in place is very much based on fossil fuels. For decades, oil and gas have been the best ways to run transportation systems, industrial machines, and energy grids. Switching to alternative energy systems needs not only new technologies but also a big change to the infrastructure, which takes a lot of time and money.

There is a problem with technological inequality between countries. Developed countries usually have better access to advanced energy technologies. On the other hand, developing countries may have trouble because of high costs, a lack of experts, and inadequate infrastructure. This makes the global transition uneven, which raises the chances of energy crises and economic inequality.

The speed of innovation can also be a limiting factor. To make progress in clean energy technologies, it is necessary to invest in them for a long time, have stable government support, and work together with other countries. If humanity does not have these, technology may not move fast enough to meet the world's growing energy needs while also cutting down on dependence on fossil fuels. Technological barriers are still a big problem that makes it hard to make a smooth transition away from oil and gas.

B. Political and Economic Constraints

As of early 2026, the global economy remains deeply dependent on oil and gas. Despite ongoing discussions about energy transition, demand continues to stay at extremely high levels, exceeding 100 million barrels per day. This level of dependence highlights how central fossil fuels still are to modern economies, especially in transportation, industry, and global trade.

At the same time, the global oil market has become increasingly fragile and unpredictable. Recent geopolitical tensions, particularly in the Middle East, have triggered major supply disruptions. In March 2026 alone, global oil supply dropped by over 10 million barrels per day, marking one of the largest shocks in history. These kinds of disruptions show how quickly energy systems can be destabilized, creating ripple effects across the global economy.

Oil and gas are also no longer just economic resources, they are powerful political tools. Countries can use energy exports, sanctions, or supply restrictions to influence international relations and gain strategic advantages. For example, sanctions on major oil-producing countries have reshaped global trade flows and directly impacted energy prices. This “weaponization” of energy makes global cooperation more difficult and increases geopolitical tensions.

In many cases, heavy dependence on oil revenues creates internal challenges as well. Countries that rely heavily on fossil fuel exports, often referred to as rentier states, frequently face issues such as political instability, corruption, and unequal wealth distribution. Because government revenues are tied to oil, economic diversification is often neglected, making these countries more vulnerable to both economic and political crises.

Security risks further complicate the situation. Oil production and transportation often take place in politically unstable regions. In these areas, infrastructure like pipelines can be targeted, and companies must invest heavily in security measures to protect operations and personnel. This increases overall costs and adds another layer of uncertainty to energy markets.

Another major challenge is the economic trap many developing countries face. For these nations, expanding fossil fuel production is often necessary to generate revenue and service existing debts. However, this reliance limits their ability to invest in renewable energy and slows down the transition process. This issue is particularly concerning in the context of rising global debt levels, which further restrict financial flexibility.

Oil price volatility also has direct consequences for the global economy. When prices rise sharply, approaching or exceeding $100 per barrel, it increases production and transportation costs, which in turn fuels inflation and slows economic growth. Recent developments have shown how rising fuel prices can quickly translate into higher living costs and broader economic instability.

At the same time, continued investment in oil and gas infrastructure carries long-term risks. As the world gradually transitions toward cleaner energy, these investments may become "stranded assets," meaning they lose economic value before the end of their expected lifespan. This creates uncertainty for both governments and private investors.

Finally, for many countries, the economic reliance on fossil fuels remains a structural issue. In more than 20 countries, oil and gas revenues make up a significant portion of government income. Moving away from this system is extremely challenging, as it requires not only economic restructuring but also large upfront investments in alternative energy sources, something that many countries are not yet prepared to handle.

i. The Impact of the Iran- USA Conflict

The ongoing tensions between the United States and Iran don't just affect politics, they directly shake global energy markets, especially natural gas. While oil usually gets most of the attention, natural gas has become just as important and, in many ways, just as vulnerable. One of the biggest issues is how dependent the global energy trade is on a few key routes. A huge portion of the world's liquefied natural gas (LNG) passes through the Strait of Hormuz, so even the smallest disruption there can create immediate global effects. When tensions rise in the region, shipments slow down or even stop, and that uncertainty spreads quickly into global markets.

In 2026, this became especially clear as the conflict escalated and energy infrastructure in the region came under pressure. Some major exporters, including Qatar, experienced disruptions in their LNG output. Since Qatar alone plays a major role in global supply, even partial interruptions were enough to tighten global markets and create immediate concern among importing countries. The effects did not stay local for long. Europe, which relies heavily on imported natural gas, saw prices jump significantly as supply became less stable. For many countries, this meant higher energy bills almost overnight, which then fed into inflation and increased economic pressure on households and industries.

At the same time, the conflict shifted global energy flows in unexpected ways. As Middle Eastern supply became less reliable, countries started turning more toward alternative suppliers like the United States. While this increased U.S. exports, it also tightened domestic supply and contributed to rising prices there as well. In other words, the shock did not stay in one region, it moved across the entire system.

ii. The Impact of the Russia-UkraineConflict

The conflict between Russia and Ukraine has demonstrated the strong relationship between geopolitical stability and global energy security, particularly with regard to natural gas. Prior to the beginning of the conflict, a large portion of Europe's energy supply came from Russian pipeline gas. Because of this reliance, any strain on ties between Russia and Europe may easily turn into an energy crisis.

Natural gas supplies from Russia to Europe were severely curtailed or shut off entirely through vital pipelines as the conflict worsened. The European energy markets were immediately under pressure due to this sudden interruption in supplies. Countries that had previously relied on reliable and reasonably priced Russian gas were forced to quickly look for alternative sources, frequently at significantly higher costs. Europe thus significantly relied on imports of liquefied natural gas (LNG), especially from the US, Qatar, and other producers. But because LNG is more costly and logistically challenging than pipeline gas, energy prices have sharply increased throughout the continent. The effects were felt by both households and businesses, with rising production costs and heating prices contributing to overall inflation.

Global energy markets were also altered by the conflict. Growing demand for LNG in Europe reduced supplies in other areas, driving up prices globally. These shifts particularly affected poorer nations, which were already susceptible to swings in energy prices.

iii. The Impact of Covid-19

Global natural gas markets were significantly and immediately impacted by the COVID-19 epidemic, demonstrating how vulnerable energy systems are to unexpected worldwide shocks. Lockdowns and limitations during the start of the pandemic in 2020 caused a dramatic drop in transportation, industrial activity, and overall economic output. As a result, the world's energy consumption drastically decreased in a relatively short amount of time.

Global markets became unbalanced as a result of this rapid decline in demand. In many areas, natural gas prices dropped, and producers had trouble controlling excess supply. Shipments of liquefied natural gas (LNG) were either rerouted or delayed, and storage facilities in a number of nations soon filled up as a result of lower usage. This circumstance demonstrated the gas market's reliance on ongoing business and industrial activities. However, not every region had the same effects. Early on, demand declined, but labour shortages, logistical constraints, and production slowdowns caused supply chain disruptions in some nations. Despite a decrease in total demand, this led to short-term instability in the allocation of energy.

Natural gas demand sharply increased as economies started to recover. As limitations loosened, households needed more energy, businesses started operations, and power usage rose. Due to supply's inability to quickly adjust to growing demand, this quick recovery caused price instability in several markets.

C. Energy Security Concerns

The International Energy Agency (IEA) defines energy security as uninterrupted access to energy at affordable prices. Reliability, resilience, and efficiency are the three pillars upon which the established framework of energy security is built.

The ability of a nation's energy supply to meet the power needs of all sectors, particularly energy-intensive ones like transportation and heavy industry, is what determines energy reliability. The ability of a nation to anticipate and adapt to disruptions in its energy supply, such as those brought on by conflict or catastrophic weather occurrences, is known as energy resilience. The goal of energy efficiency is to use as little energy as possible, which can be accomplished in a number of ways, from making sure that buildings are well-insulated to directly lowering energy use.

Supply stability is one of the most important components of energy security. Natural gas markets are extremely vulnerable to sudden shifts in demand, infrastructure failures, and geopolitical tensions. Long-distance pipelines and shipments of liquefied natural gas account for a large portion of the world's supply, thus even small disruptions can create severe price fluctuations and shortages in importing nations. Another important factor in energy security is infrastructure. Storage facilities, LNG terminals, and pipelines are essential parts of the world's gas network. However, this infrastructure is limited or out-of-date in many areas, and it is costly to construct and maintain. Particularly vulnerable during times of high demand or supply interruption are nations with inadequate storage capacity. Price stability is yet another important factor. Geopolitical events, seasonal demand, and market speculation can all cause natural gas prices to change quickly. Energy security is both a supply and an economic concern since these price fluctuations have a direct impact on individuals, businesses, and general economic stability. Diversification and energy security are intimately related. In general, nations that depend on a variety of energy providers and sources are more shock-resistant. On the other hand, during global crises, people who rely significantly on a particular energy source or kind are more vulnerable. For this reason, a lot of governments are increasing their LNG partnerships and investing in alternative energy sources.

Overall, natural gas is essential to modern energy security, but its worldwide supply chain also poses risks. To lower the risks of supply disruption and economic instability, diversification, infrastructure investment, and international cooperation are all necessary to provide stable access to gas.

9. Major Parties Involved

A. Oil and Gas Producing States

The countries that produce most of theworld's oil and gas have a lot of power when it comes to global energy. What they decide todo - how much oil to produce, what price to sell it at, and under what conditions - can affectthe whole global economy right away. But it's wrong to think they all want the same things. They have different interests, weaknesses, and priorities, and knowing about these differences is crucial if we want to make good decisions about energy.

The countries in the Gulf, like **Saudi Arabia**, the **United Arab Emirates, Iraq**, and **Kuwait**, rely heavily on oil money. In fact, oil revenues make up most of the government's income in these countries. This means that their financial stability, social benefits, and political power are all tied to the sale of oil at good prices.

Saudi Arabia, as the leader of OPEC and the world's largest oil exporter, has a lot of influence over how much oil is produced and sold globally, which affects prices worldwide. When Saudi Arabia decides to produce more or less oil, it's big news for financial markets, governments, and people who use energy. The United Arab Emirates has tried to diversify its economy more than other Gulf countries, but it still relies heavily on selling oil.

Iran and **Venezuela**, which are also major oil producers, face challenges because of Western sanctions that limit their access to markets and add to the geopolitical complexity of their roles in the oil industry. These countries are watching the oil market closely, and their decisions can have a big impact on the global economy. The fact that they rely so heavily on oil revenues makes them vulnerable to changes in the market. If oil prices drop, it can affect their financial stability and social contracts. On the other hand, if oil prices rise, it can give them more power and influence in the global economy.

The Gulf states, particularly Saudi Arabia, play a crucial role in shaping the global oil market, and their decisions are closely watched by everyone involved. The United Arab Emirates's efforts to diversify its economy are notable, but it still has a long way to go. The country's economy is still heavily reliant on oil exports, which makes it vulnerable to fluctuations in the market. Iran and Venezuela, on the other hand, face significant challenges due to the sanctions imposed on them. These sanctions limit their ability to sell oil and participate in the global market, which adds to the complexity of their roles in the oil industry. Overall, the Gulf states' reliance on oil revenues makes them sensitive to changes in the market, and their decisions can have far-reaching consequences for the global economy.

Russia occupies a unique position as the world's largest natural gas exporter and a major oil producer outside OPEC. Its energy exports have historically served as both an economic and a geopolitical tool, a dynamic that became apparent following its 2022 invasion of Ukraine, when Western sanctions dramatically disrupted the energy relationship between Russia and Europe. Russia's willingness to use energy supply as leverage in political disputes makes it a particularly consequential and unpredictable stakeholder in any energy governance discussion.

The United States is an important example of a country with conflicting priorities. On one hand, it's the world's biggest producer of oil and gas, thanks to the shale revolution in the 2010s. On the other hand, it's also a major consumer of energy, and its government has pledged to reduce carbon emissions under the **Paris Agreement**. This creates a lot of tension in American energy policy, which is influenced by different groups with competing interests. The fossil fuel industry wants to keep producing and selling oil and gas, while environmentalists push for cleaner energy sources to meet climate targets. At the same time, the government has to think about energy security, making sure the country has a stable supply of energy to power its economy. All these factors pull American energy policy in different directions, making it challenging to balance competing demands. As a result, the country's energy policy is shaped by a complex mix of domestic politics, international commitments, and economic considerations.

Norway and Canada are two major players in the energy scene, and their governments are actually on board with the whole energy transition idea. But, they're still struggling with some tough decisions like how fast to stop extracting oil and gas from reserves that are still making them money. It's a tricky situation, because on one hand, they want to be part of the solution to the climate crisis, but on the other hand, they don't want to just leave all that valuable energy behind.

B. Oil and Gas Consuming States

The United States is both the world's largest economy and one of its largest energy consumers. Its domestic production capacity gives it more energy security than most other large consumers, but it remains deeply embedded in a petroleum-dependent transportation and industrial system. US energy policy has historically oscillated between administrations that prioritize fossil fuel production and those that emphasize the clean energy transition, creating uncertainty for both domestic and international stakeholders.

China has become the biggest user of energy in the world and it imports more oil than any other country. The decisions China makes about how it uses energy, what it invests in, and its industrial policies have a big impact on the whole world. On one hand, China is putting a lot of money into renewable energy, more than any other country, but on the other hand, it's also building a lot of new coal-fired power plants.

This shows that China is trying to balance its need to grow and develop with its promise to help fight climate change. Because China relies so heavily on oil from other countries, it's really concerned about having a steady supply of energy, and this affects how it interacts with other countries, especially in the Middle East and Africa.

The European Union holds a significant place in international relations to energy. As a group, they rely heavily on importing oil and gas, which makes them vulnerable. The war in Ukraine showed just how severe this vulnerability can be. To address this, the EU has sped up its transition to clean energy through plans like the **European Green Deal and REPowerEU.** This makes them one of the most ambitious groups when it comes to reducing carbon emissions. However, not all member states are moving at the same pace. Some countries in Central and Eastern Europe, which rely heavily on coal, are transitioning more slowly.

India is a rapidly growing consumer whose energy demand is expected to increase more than that of any other country over the coming decades. It faces an acute version of the development versus sustainability tension, needing affordable energy to lift hundreds of millions of people out of poverty while also being one of the countries most vulnerable to climate change impacts. Japan and South Korea are highly import-dependent industrial economies with limited domestic energy resources, making energy security a top foreign policy priority and driving strong interest in supply diversification and strategic reserves.

C. International Energy Organizations and Bodies

The way the world's energy markets are run is heavily influenced by several international organizations. The most well-known of these is **OPEC**, which stands for the **Organization of the Petroleum Exporting Countries**. It was formed to give countries that produce oil more control over the global market. Nowadays, OPEC mainly works to coordinate how much oil its member countries produce, which in turn affects the price of oil. There's also a larger group called OPEC+, which includes Russia and other countries that aren't part of OPEC. This group has become more important for making big decisions about oil production.

The International Energy Agency was created mainly because of the Arab oil embargo. At first, its main job was to manage oil reserves for rich countries that import a lot of oil. But over time, its role has grown, and now it's the top place for **energy data and analysis** worldwide. Lately, it's been very clear about supporting the switch to clean energy.

The Energy Charter Treaty, which was created to safeguard energy investments across international borders, especially in post-Soviet and European countries, has become a topic of controversy. Some countries that are trying to move away from fossil fuel projects are facing expensive lawsuits from investors who are using the treaty's arbitration rules, which raises concerns about whether the current system for protecting investments is consistent with the need to address climate change.

9. Possible Blocs and Alliances

- Bloc 1: Major OPEC/OPEC+ Producers

    Core Interest: Protecting oil revenues, resisting rapid transition

    Members: Saudi Arabia, Iraq, Iran, Kuwait, UAE, Algeria, Libya, Nigeria, Venezuela, Gabon

These countries depend heavily on hydrocarbon exports for government revenue and will collectively resist any framework that threatens long-term oil demand or accelerates transition timelines beyond what they consider manageable.

- Bloc 2: Non-OPEC Major Producers

Core Interest: Energy independence, market stability, selective transition

Members: Russian Federation, Norway, Canada, Azerbaijan, Kazakhstan, Turkmenistan, Oman, Qatar

These countries are major producers outside OPEC's formal structure. Their interests overlap with Bloc 1 on protecting production rights but diverge on governance, as Norway and Canada are more open to transition frameworks than Russia or Azerbaijan.

- Bloc 3: Western Industrialized Consumers

Core Interest: Energy security, decarbonization, market regulation

Members: United States, United Kingdom, France, Germany, Netherlands, Italy, Spain, Greece, Poland, Japan, Republic of Korea, Australia

These countries are the world's wealthiest consumers and the strongest advocates for the clean energy transition. However, they are internally divided between those who prioritize decarbonization aggressively, such as Germany and France, and those more cautious about economic disruption, such as Poland and Australia.

- Bloc 4: Emerging Economy Consumers

Core Interest: Affordable energy access, development rights, gradual transition

Members: China, India, Brazil, Indonesia, Turkey, Mexico, South Africa, Egypt, Vietnam, Thailand, Malaysia, Philippines, Pakistan, Bangladesh

This is the most influential swing bloc in the committee. These countries are large and growing consumers that simultaneously face pressure to decarbonize and legitimate demands for affordable development. China and India in particular carry enormous weight. They are likely to form a coalition demanding that wealthy nations bear a greater share of transition costs and finance.

- Bloc 5: Vulnerable Developing and LDC Nations

Core Interest: Energy access, climate finance, loss and damage

Members: Kenya, Mozambique, Zambia, Zimbabwe, Democratic Republic of the Congo, Sri Lanka, Morocco, Ghana equivalent countries

These countries contribute minimally to global emissions but are among the most exposed to both oil price shocks and climate change impacts. They will likely push for robust climate finance commitments, debt relief tied to energy transition, and formal recognition of loss and damage. They are natural allies with Bloc 4 on equity arguments but may diverge on the pace of fossil fuel phaseout.

- Bloc 6: Caught-in-the-Middle Producers

Core Interest: Balancing development needs with transition pressure

Members: Angola, Colombia, Peru, Argentina, Chile, Ecuador equivalent countries

These are mid-sized oil and gas producers that rely on hydrocarbon revenues for development but are also vulnerable to climate impacts and price volatility. They are likely to support managed transition frameworks that include revenue replacement mechanisms and are more flexible than core OPEC members but unwilling to accept rapid phaseout timelines.

10. Matrix

Algeria	**Greece**	**Netherlands**
Angola	**India**	**Nigeria**
Argentina	**Indonesia**	**Norway**
Australia	**Iran**	**Oman**
Azerbaijan	**Iraq**	**Pakistan**
Bangladesh	**Italy**	**Peru**
Brazil	**Japan**	**Philippines**
Canada	**Kazakhstan**	**Poland**
Chile	**Kenya**	**Qatar**
China	**Kuwait**	**Republic of Korea**
Colombia	**Libya**	**Romania**
Democratic Republic of the Congo	**Malaysia**	**Russian Federation**
Egypt	**Mexico**	**Saudi Arabia**
France	**Morocco**	**Singapore**
Germany	**Mozambique**	**South Africa**

Spain	**Ukraine**	**Vietnam**
Sri Lanka	**United Arab Emirates**	**Zambia**
Thailand	**United Kingdom**	**Zimbabwe**
Turkmenistan	**United States of America**	
Türkiye	**Venezuela**	

11. Conclusion

Fossil fuels account for more than 80% of the current energy production in the world. The biggest concern of Fossil energy usage is the environmental impact, primarily carbon dioxide, methane, and other greenhouse gases. Greenhouse gas emissions induce global warming, leading to rising temperatures, severe droughts, rising sea levels, and ecosystem disruption.

Tackling methane emissions is the single most important measure that contributes to the overall fall in emissions from oil and gas operations, followed by eliminating flaring and electrification. Electrification converts an energy-consuming device, system, or sector from non-electric sources of energy to electricity. It's an emerging economy-wide decarbonization strategy that is beginning to impact the electric power industry. Emissions performance varies considerably across the industry. Government policy, alongside efforts by leading companies to share and extend best practices, could therefore be very effective in reducing emissions from methane leaks and flaring[1].

The current economic systems are highly reliant on energy production from fossil fuels. Past and current conflicts show that the economic models are highly vulnerable to possible conflicts, which cause a shortage in fossil fuel transportation. Resource-poor countries often bear the burden of conflicts in resource-rich nations. Conflicts cause fluctuations in fossil fuel prices, affecting many industries, resulting in higher rates of inflation, a current account deficit, and a decrease in consumption rates. Conflict can also increase the risk profile of fossil fuel-oriented projects due to disruptions in the energy supply chain and potentially impact the clean energy transition. intense conflicts require significant fuel consumption, leading to widespread carbon dioxide emissions and worsening climate change.

Fuel switching is the substitution of one form of fuel for another. Natural gas is a possible alternative to oil in the event of an oil disruption, particularly in the power sector.

Restraint measures that range from light-handed(like public information campaigns to promote voluntary actions) to more medium-and heavy-handed (like driving restrictions or fuel rationing) may be implemented by governments as an emergency response to a demand crisis caused by a conflict.

The implementation of transnational energy governance cooperation programs, including organizations like IEA(International Energy Agency) and OPEC(Organization of the Petroleum Exporting Countries) and major stakeholders, may mitigate the impacts of conflicts that cause energy crises. Through regular conventions and communication channels, the fluctuations and dependency on geopolitical tensions will be controlled.

The cooperation between energy security advisory bodies for stock releases and governmental advisory bodies may also be helpful during times of conflict.

In conclusion, Fossil energy sources still remain fundamental in current international systems, with great changes needed to fall under the requirements of Sustainable Development Goal Number 7 and to prevent global warming and climate change going to an irreversible level, caused by Greenhouse emissions. Economically, Communication between organizations and major stakeholders remains vital to prevent possible fuel shortages and emergencies.

12. Questions to be Addressed

- Which existing treatiesand frameworks can be used to reduce market manipulation and prevent political weaponization of oil and gas?
- Which collaboration methods can be used to assist a faster progress towards reaching Sustainable Development Goal Number 7?
- How can the criteria for clean and renewable energy sources be standardized internationally?
- How can the energy production methods be diversified without the possible creation of new energy dependencies?
- What role should the International organizations play in preventing energy crises and mediating between parties at risk of conflict?
- How can a transition from fossil fuels to renewable energy sources be developed without causing economic instability?
- How can global supply chains for energy transportation be secured and made more resilient against possible conflicts?
- How can the reliance on oil and gas imports from resource-rich countries be reduced without disrupting global trade and economic systems?
- How can the fossil fuel production be managed by international bodies for a transition to renewable energy sources without compromising national sovereignty?

12. Bibliography

Intergovernmental Panel on Climate Change. *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2022.

Intergovernmental Panel on Climate Change. *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2022.

International Energy Agency. *Net Zero by 2050: A Roadmap for the Global Energy Sector*. IEA, 2021, www.iea.org/reports/net-zero-by-2050.

International Energy Agency. *World Energy Outlook 2022*. IEA, 2022, www.iea.org/reports/world-energy-outlook-2022.

International Energy Agency. *Global Methane Tracker 2022*. IEA, 2022, www.iea.org/reports/global-methane-tracker-2022.

Organization of the Petroleum Exporting Countries. *World Oil Outlook 2045*. OPEC Secretariat, 2022, www.opec.org/opec_web/en/publications/340.htm.

Organization of the Petroleum Exporting Countries. *OPEC Annual Statistical Bulletin 2022*. OPEC Secretariat, 2022, www.opec.org/opec_web/en/publications/202.htm.

United Nations Environment Programme. *Emissions Gap Report 2022: The Closing Window — Climate Crisis Calls for Rapid Transformation of Societies*. UNEP, 2022, www.unep.org/resources/emissions-gap-report-2022.

United Nations Environment Programme. *Environmental Assessment of Ogoniland*. UNEP, 2011, www.unep.org/resources/report/environmental-assessment-ogoniland.

United Nations Framework Convention on Climate Change. *The Paris Agreement*. UNFCCC, 2015, unfccc.int/process-and-meetings/the-paris-agreement.

International Renewable Energy Agency. *World Energy Transitions Outlook 2022: 1.5°C Pathway*. IRENA, 2022, www.irena.org/publications/2022/Mar/World-Energy-Transitions-Outlook-2022.

International Renewable Energy Agency. *Renewable Power Generation Costs in 2022*. IRENA, 2023, www.irena.org/publications/2023/Aug/Renewable-Power-Generation-Costs-in-2022.

International Monetary Fund. *World Economic Outlook: Countering the Cost-of-Living Crisis*. IMF, Oct. 2022, www.imf.org/en/Publications/WEO/Issues/2022/10/11/world-economic-outlook-october-2022.

International Monetary Fund. *Fiscal Monitor: Fiscal Policy from Pandemic to War*. IMF, Apr. 2022, www.imf.org/en/Publications/FM/Issues/2022/04/12/fiscal-monitor-april-2022.

World Health Organization. *Ambient Air Pollution: A Global Assessment of Exposure and Burden of Disease*. WHO, 2016, www.who.int/publications/i/item/9789241511353.

World Bank. *Poverty and Shared Prosperity 2022: Correcting Course*. World Bank, 2022, www.worldbank.org/en/publication/poverty-and-shared-prosperity.

World Bank. *State and Trends of Carbon Pricing 2022*. World Bank, 2022, openknowledge.worldbank.org/handle/10986/37455.

Welsby, Dan, et al. "Unextractable Fossil Fuels in a 1.5°C World." *Nature*, vol. 597, 2021, pp. 230–234, www.nature.com/articles/s41586-021-03821-8.

Alvarez, Ramón A., et al. "Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain." *Science*, vol. 361, no. 6398, 2018, pp. 186–188, www.science.org/doi/10.1126/science.aar7204.

International Energy Agency. (n.d.). *Oil security and emergency response*. https://www.iea.org/about/oil-security-and-emergency-response

World Coal Institute. (2009). *Coal mining* [Archived webpage]. In the World *Coal Institute*. Retrieved April 21, 2026, from https://web.archive.org/web/20090428202846/http://www.worldcoal.org/pages/content/index.asp?PageID=92

National Geographic Society. (2025, July 2). *Petroleum*. National Geographic Education. https://education.nationalgeographic.org/resource/petroleum/

International Energy Agency. (n.d.). *World energy: Natural gas*. https://www.iea.org/world/natural-gas

U.S. Energy Information Administration. (n.d.). *Liquefied natural gas*. https://www.eia.gov/energyexplained/natural-gas/liquefied-natural-gas.php

Stanford University. (n.d.). *Oil. Understand Energy Learning Hub.* https://understand-energy.stanford.edu/energy-resources/fossil-fuel-energy/oil#fast-fact s-sources

Ritchie, H., Roser, M., & Rosado, P. (2025). *Energy Institute – Statistical Review of World Energy (2025)* (processed by Our World in Data). Our World in Data. https://ourworldindata.org/energy

International Energy Agency. (n.d.). *The Middle East and global energy markets.* https://www.iea.org/topics/the-middle-east-and-global-energy-markets

Barsky, R. B., & Kilian, L. (2004). Oil and the macroeconomy since the 1970s. *Journal of Economic Perspectives*, *18*(4), 115–134. https://doi.org/10.1257/0895330042632735

BP plc. (2022). *BP statistical review of world energy 2022* (71st ed.). https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf

Colgan, J. D. (2009). The International Energy Agency: Challenges for the 21st century. *Global Governance*, *15*(4), 461–482. [suspicious link removed]

Downie, C. (2015). Global energy governance: Do the BRICs have the energy to drive reform? *International Affairs*, *91*(4), 799–812. https://doi.org/10.1111/1468-2346.12340

Eurostat. (2022). *EU energy mix and import dependency: Statistics explained*. Publications Office of the European Union. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_energy_mix_and_impor t_dependency

Fattouh, B. (2021). *OPEC+ at a crossroads*. Oxford Institute for Energy Studies. https://www.oxfordenergy.org/publications/opec-at-a-crossroads/

Frankel, J. A. (2011). *The natural resource curse: A survey* (Working Paper No. 15836). National Bureau of Economic Research. https://www.nber.org/papers/w15836

Fulwood, M. (2022). *The 2021-2022 European gas crisis: Causes, consequences and implications*. Oxford Institute for Energy Studies. https://www.oxfordenergy.org/publications/the-2021-2022-european-gas-crisis-causes-consequences-and-implications/

Gaidar, Y. (2007). *Collapse of an empire: Lessons for modern Russia*. Brookings Institution Press.

Hamilton, J. D. (2009). Causes and consequences of the oil shock of 2007-08. *Brookings Papers on Economic Activity*, *2009*(1), 215–261. https://www.brookings.edu/articles/causes-and-consequences-of-the-oil-shock-of-2007-08/

Hamilton, J. D. (2013). Historical oil shocks. In R. E. Parker & R. Whaples (Eds.), *Routledge handbook of major events in economic history* (pp. 239–265). Routledge.

International Energy Agency. (1974). *Agreement on an international energy programme*. https://www.iea.org/reports/agreement-on-an-international-energy-programme

International Energy Agency. (2023). *Oil market report: Annual statistical supplement*. https://www.iea.org/reports/oil-market-report-april-2023

International Energy Forum. (2020). *IEF charter*. https://www.ief.org/about-ief/ief-charter

International Monetary Fund. (2023). *World economic outlook: A rocky recovery*. https://www.imf.org/en/Publications/WEO/Issues/2023/04/11/world-economic-outlook-april-2023

Kilian, L. (2008). The economic effects of energy price shocks. *Journal of Economic Literature*, *46*(4), 871–909. https://doi.org/10.1257/jel.46.4.871

Marcel, V. (2006). *Oil titans: National oil companies in the Middle East*. Brookings Institution Press.

Maugeri, L. (2013). *The shale oil boom: A U.S. phenomenon* (Discussion Paper 2013-05). Harvard Kennedy School, Belfer Center for Science and International Affairs. https://www.belfercenter.org/publication/shale-oil-boom-us-phenomenon

Painter, D. S. (1986). *Oil and the American century: The political economy of U.S. foreign oil policy, 1941-1954*. Johns Hopkins University Press.

Petrobras. (2023). *2022 production report*. https://www.investidorpetrobras.com.br/en/results-and-notices/production-and-sales-reports/

Pierru, A., Smith, J. L., & Zamrik, T. (2018). OPEC's impact on oil price volatility: The role of spare capacity. *The Energy Journal*, *39*(2), 173–196. https://doi.org/10.5547/01956574.39.2.apie

Sachs, J. D. (1989). The debt overhang of developing countries. In G. A. Calvo, R. Findlay, P. Kouri, & J. B. de Macedo (Eds.), *Debt, stabilization and development* (pp. 80–102). Basil Blackwell.

Sampson, A. (1975). *The seven sisters: The great oil companies and the world they made*. Hodder and Stoughton.

Saudi Aramco. (2023). *Saudi Aramco annual report 2022*. https://www.aramco.com/en/investors/reports-and-presentations

Skeet, I. (1988). *OPEC: Twenty-five years of prices and politics*. Cambridge University Press.

Smil, V. (2017). *Energy and civilization: A history*. MIT Press.

Stern, J. (2012). *The pricing of internationally traded gas*. Oxford Institute for Energy Studies.

Tang, K., & Xiong, W. (2012). Index investment and the financialization of commodities. *Financial Analysts Journal*, *68*(6), 54–74. https://doi.org/10.2469/faj.v68.n6.5

UNFCCC. (1997). *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. https://unfccc.int/resource/docs/convkp/kpeng.pdf

UNFCCC. (2022). *Sharm el-Sheikh Implementation Plan*. https://unfccc.int/documents/624444

United Nations. (1992). *Agenda 21: Programme of action for sustainable development*. https://sustainabledevelopment.un.org/outcomedocuments/agenda21

Unruh, G. C. (2000). Understanding carbon lock-in. *Energy Policy*, *28*(12), 817–830. https://doi.org/10.1016/S0301-4215(00)00070-7

U.S. Energy Information Administration. (2023). *International energy statistics*. https://www.eia.gov/international/data/world

Van de Graaf, T. (2013). *The politics and institutions of global energy governance*. Palgrave Macmillan.

Victor, D. G. (2011). *Global warming gridlock: Creating more effective strategies for protecting the planet*. Cambridge University Press.

Yergin, D. (2011). *The quest: Energy, security, and the remaking of the modern world*. Penguin Press.

Al-Damkhi, A. M., Abdul-Wahab, S. A., & Al-Khulaifi, A. S. (2009). Kuwait's 1991 environmental tragedy: Lessons learned. *Environment, Development and Sustainability*, 11(4), 775–793.

Bordoff, J. and O'Sullivan, M. L. (2022). The new energy order: How governments will transform energy markets. *Foreign Affairs*, 101(4), pp. 131-144.

Gold, R. (2014). *The boom: How fracking ignited the American energy revolution and changed the world*. Simon and Schuster.

Fattouh, B., Kilian, L. and Mahadeva, L. (2013). The role of speculation in oil markets: What have we learned so far? *The Energy Journal*, 34(3), pp. 7-33.