Forum: Environment Assembly

Issue: Acknowledging the impact of oil and gas drilling on natural habitats

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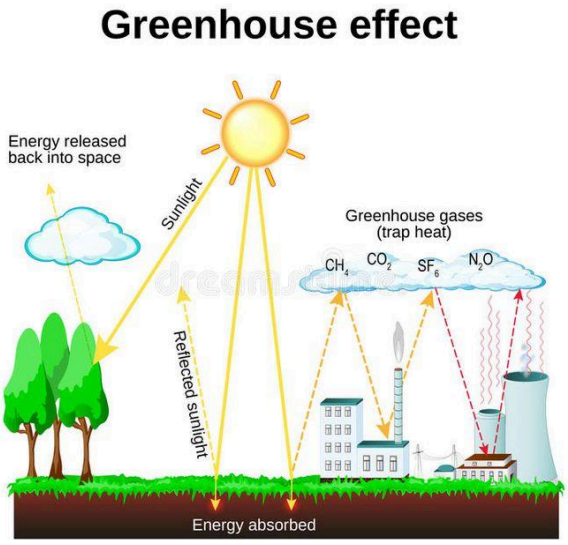
Table of Contents

I. Introduction

Many countries rely heavily on natural gas and oil – whether for consumption in the production of items or on the money that is gained by the extraction and selling. However this economy comes at a high price: not only do the drilling centers disturb ecosystems/wildlife around them, but the burning fossil fuels, gained by drillings are also one of the main contributors to CO2 and other powerful greenhouse gasses that cloud the atmosphere and trap the sunlight, causing the atmosphere and everything beneath it to heat up. The rise in temperature kicks off many new processes all of which endanger certain species that take longer to adapt and rely on e.g.
glaciers that are now melting



II. Definition of Key Terms

A. Ecosystem

An ecosystem is the organized community life of different organisms and their habitat/abiotic environment. Ecosystems often work in a careful balance of population size and symbioses, and because every species plays a specific role in the life of another species, these systems can easily collapse at (human) influence. Of course a new balance can be found but it may take a while before the remaining species and individuals of this species that have adapted (soon) enough will find new habits etc.[1]

[1] https://education.nationalgeographic.org/resource/ecosystem/

B. Renewable energies

Instead of using fossil fuels such as oil, gas and coal energy can be harnessed through near non-emission, eco friendly and sustainable sources such as wind- and solar energy. The UN defines renewable energy as energy derived from a natural source that is consumed at a slower/ the same rate as it constantly replenishes.[2]

C. Global warming v.s. Climate change

While global warming is often used as an equivalent of climate change, the term specifically refers to the Earth's rising temperatures caused by the reflection of sunlight within the atmosphere by greenhouse gasses. Climate change encompasses broader shifts in climate indicators like rainfall, temperature, and wind patterns over thousands of years.[3]

D. Abiotic factors

Abiotic factors are climate conditions or the different environmental conditions that are not influenced by any living thing such as temperature, humid or arid periods, seasons, PH-values in waters, winds etc.[4]

E. Blow-Out

Blow-Out in the context of oil and gas drillings is defined as the uncontrolled leakage of oil or gas into the environment. Oil is destructional to habitats and wildlife

III. General Overview

A. Off-shore Drilling platforms

Onshore drilling platforms disturb ecosystems and wildlife within these ecosystems on many levels. The most obvious problem is probably the destruction of the habitat in order to build these drilling platforms. The oil and gas that is extracted often causes run-offs or leaks that contaminate nearby water sources and the groundwater in general. This can lead to a poisoning of smaller organisms that are at the very base of the food chain. It also degenerates the health of the plants and larger animals that all depend on the water. But not only the ground is contaminated by

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[2] https://www.un.org/en/climatechange/what-is-renewable-energy

[3] https://www.usgs.gov/faqs/what-difference-between-global-warming-and-climate-change#:~:text=%E2%80%9CGlobal%20warming%E2%80%9D%20refers%20to%20the,%2C%20temperature%2C%20and%20wind%20patterns.

[4] https://unece.org/ecosystem-services-0#

oil and gas drilling: the process of drilling releases pollutants including volatile organic compounds (VOCs), nitrogen oxides (NOx), sulfur dioxide (SO2), and particulate matter. Birds and small mammals are sensitive to this type of air pollution and may be harmed by it and chemical wastes may also be exposed to wildlife around the drilling platform. The constant and loud noise of the machinery also scares away wildlife because it may lead to stress and habitat abandonment and even if not, discourages breeding. The streets, pipelines and other infrastructure a drilling platform requires can cut off wildlife corridors or isolate populations, preventing them from diversifying their genepool by cutting them off from contact with other populations.

In most respects, Off-shore drilling platforms are the same except that spills are much riskier because the environment is generally more prone to extreme weather events, checked less frequently due to higher costs, and because any response infrastructure is far away on the coast. Not only the source may leak, but the ships or pipelines used for transportation of oil and gas can also be dangerous to the ecosystems they cross in many ways including leaks. Once a spill has occurred it is also more challenging to contain it in the water as opposed to on-shore drilling stations. There are also frequent collisions between wildlife and the tankers that transport the oil or gas from the platform. The infrastructure also repels certain species from living there, while it attracts fewer species that may cause the food chain and biosphere to change significantly in that area.

The exploitation of oil and gas is no doubt harmful to the ecosystems around them, but the usage of these natural resources omit greenhouse gasses that promote global warming which endangers the ecosystem earth as a whole and all species including humans that live and depend on this ecosystem.

Industries have difficulty transitioning from fossil fuels to more eco-friendly green energies because they have already heavily invested in infrastructure that is only functional in combination with fossils. Furthermore it is often criticized that the lack of research, long term testing and equally manageable technologies makes it unsafe for industries to invest. Furthermore the industry gaining by the trade of oil and gas are so heavy that they impact political decisions on regulations of fossil fuels

In today's age, the majority of oil and natural gas in easily accessible oil has been found and developed. Today, oil and gas exploration is primarily dedicated to probing inhospitable places in remote parts of the world. As a result of this, companies employ new and often

unproven technologies to drill hydrocarbons. Shipping accidents, blowouts and pipeline leaks or failures can cause oil spills, which pose a serious threat to ecosystems, whether it be in the Congo Basin, Arctic or Timor Sea. When these oil spills do occur, there are no proven and effective methods to clean up oil in ice when it comes to the Arctic. The extraction of oil itself can cause lasting damage to the environment, specifically disruption of migratory pathways and degradation of important animal habitats. The Arctic is an especially important area to consider in the future, and permanent protections are needed now more than ever. In January of 2021, the Biden administration revoked an executive order that was made in 2017 that would have opened up the Arctic water around the U.S. to drilling activities. The primary reason for this was the environmental impacts, citing the vast size, remote location and extreme weather conditions, combined with a lack of infrastructure in place for possible oil spills, make drilling here very dangerous. Russia, on the other hand, has it's sights set on the Arctic and aims to only increase it's production in the Arctic regions. Currently, according to the International Energy Agency, over 80% of Russia's natural gas and roughly 20% of its petroleum production come from the Arctic. Russian energy giant Rosneft announced construction of an Arctic oil terminal at the Bukhta Sever port, which is planned to be Russia's largest oil terminal. As it stands, oil and natural gas drilling has proven to be devastating to the environment, and as oil companies set their sights on more remote areas, the margin for error has only increased.

IV. Major Parties Involved

A. UNDP[5]

The United Nations Development Program(me) (UNDP) compiles statistical data from all over the world and makes it accessible to all member states. The UNDP is concerned with sustainable development including sustainable resource consumption.

B. International Union for Conservation of Nature (IUCN)[6]

[5] https://www.undp.org/home
[6] International Union for Conservation of Nature. *International Union for Conservation of Nature (IUCN)*, https://www.iucn.org.

The IUCN is a global network of government and non-government organizations striving for the conservation of nature and biodiversity and at the same time a fair distribution of wealth and natural resources globally. They describe their mission as "Influence, which encourages and assists societies to conserve the integrity and diversity of nature and ensure that any use of natural resources is equitable and ecologically sustainable."[7].

C. International Association of Oil and Gas Producers (IOGP)[8]

The IOGP keeps data about industry and business security in the sector of oil and gas extractions, distributes information and new technologies and practices that may make the extractions less dangerous and harmful, and more efficient.

The IOGP also represents different oil and gas producers on summits or discussions

D. Organization of the Petroleum Exporting Countries (OPEC)

OPEC's dominance in the market exacerbates climate change by allowing producers of costlier and less environmentally friendly oil to commence extraction earlier, even before OPEC reserves are fully utilized. To gauge the significance of this pattern, we analyze a cartel-versus-competitors model of the international oil market through calibration and simulation.

E. Oil Companies

Oil and Gas companies have a vested interest in expanding the amount of oil and gas drilling, especially in previously unexplored areas. As a result of the huge amount of possible oil and gas fields, they don't prioritize protection of natural resources, aiming to be the first to access these resources.

F. Venezuela

In the 20th century, large amounts of oil were discovered in Venezuela, leading to a huge boost in its economy and wealth and enabling the government to finance social programs. In 1976 Venezuela nationalized its oil economy, which is still state owned. Venezuela's heavy reliance on oil exports has resulted in a one-sided economy where other aspects are neglected such as agriculture, manufacturing, and tourism. This lack of economic diversification has made Venezuela vulnerable to fluctuations in oil prices and global market dynamics. Whenever the oil

[7] International Union for Conservation of Nature. "About IUCN | IUCN." *International Union for Conservation of Nature (IUCN)*, https://www.iucn.org/about-iucn#overview.

[8] https://www.iogp.org/

prices are high, the governments can fund public welfare projects, but whenever they drop, there is no financial sector that cushions the drop in taxes and the single households. That is why Venezuela is prone to inflation, economic- and political instability and welfare crises. Lately, Venezuela has faced hyperinflation, shortages of food and medicine, and other fundamental resources and infrastructure due to a sharp decline in oil production and exportation related to an increase in green energies. International sanctions imposed on the Venezuelan government for corruption, undemocratic procedures, human rights violations, drug trafficking and other criminal activities have further exacerbated the country's economic challenges, limiting its ability to access global financial markets and trade. Because of its large fossil sector, Venezuela is a lagging country in newer sustainable development and technologies. Venezuela is an example of a country destabilized by a one sided economy and illustrates the problem countries face that are so heavily dependent on oil export income. While the international community must transition to renewable energy, it must also address and support these countries.

G. United States of America

The USA has acknowledged the risk oil and gas drilling poses to natural habitats, and has made plans to limit its impacts on the environment, such as the plans to open the 19 million acre Arctic National Wildlife Refuge in Alaska, capping decades of efforts by oil and gas companies to allow drilling in the wilderness area.

H. Russian federation

A major part of the Russian economy is made up of harvesting hydrocarbons, and it intends to expand it’s drilling and transportation infrastructure in the Arctic, as climate change has caused the seasonal ices to recess.

I. Oil Companies

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V. Timeline of Events

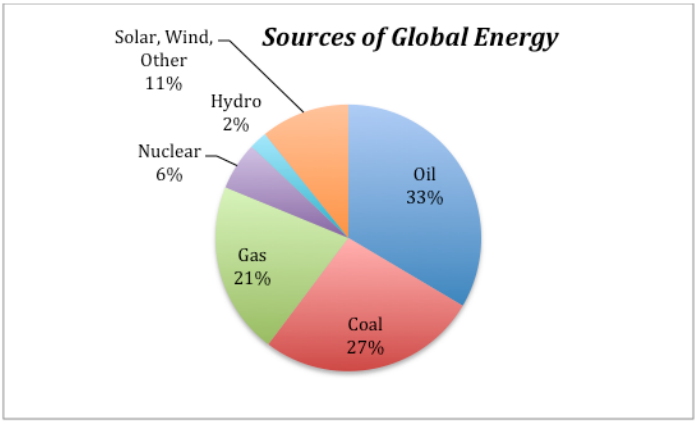
Date	Event

600BC	Oil is first discovered in current China
1780	Industrialization starts, boosting economies and fostering growth.
1859	Pennsylvania oil rush
1992	UN Conference on Environment and Development (UNCED) – also known as the Earth Summit, is held in Rio de Janeiro, Brazil, addressing global environmental issues, and protection of biodiversity. It resulted in a plan of action for sustainable development.
2002	The World Summit on Sustainable Development (WSSD) was focused on the implementation of sustainable development goals, especially responsible consumption of natural resources, including oil and gas drilling, to minimize environmental degradation.
2010	On April 20. 2010 the deep oil horizon spill (continued for 86 days) on the gulf of mexico started. The oil leaked from the off-shore platform. It is considered to be the largest marine oil spill in history and has had devastating effects on life and biodiversity in the sea near the south east coast of louisiana.
2015	The Paris agreement was made and signed by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France. The international treaty on climate change including regulations and goals entered into force a year later and is legally binding.
2022	United Nations Report on preservation efforts

VI. Previous & Possible Solutions

a. Expand Renewable Energies

More Eco Friendly and sustainable energy sources can be harnessed, such as wind, solar hydroelectric, and geothermal power. technologies



[9]

b. Protected Zones, habitat restoration and less harmful drilling techniques

Implementing protected zones without any human presence gives wildlife a place to flourish in and escape or migrate to from other habitats that might be destroyed. There are also some programs that aim to rehabilitate formerly destroyed habitats by ridding them of toxins or wastes and planting vegetation, especially trees that help keep the ground nutritious and damp for other plants and animals. To avoid a broad destruction of habitat in the first place, techniques such as directional drilling can be used. Directional drilling differs from more traditional methods by the way that oil sources are found and exploited within the ground: normally the boarings are made anywhere where oil is suspected. Instead one deep well is boared and many underground passages spreading in different directions. That way the habitat on the surface is not being disturbed.

c. Incentivize green manufacturing

By providing financial benefits and state administered credits supplied by banks, large corporations and especially smaller companies can start investing in green technologies and switch to renewable energy. For the companies who could have afforded to restructure their programs, but have been reluctant to make new investments, the financial presents itself as a good opportunity to do so now, because later on, that benefit will be lost to companies that decide to invest too late. Governments can also give tax breaks if state set green conditions are fulfilled as an incentive.

VII. Conclusion

[9] https://www.e-education.psu.edu/earth104/node/1345

As global demand for energy continues to rise, the extraction and consumption of fossil fuels are not terminated, even when from an ecological angle this would be strictly necessary. The drilling of oil and gas leads to habitat destruction, a loss of biodiversity and disruption of ecosystems that are already under strain, adapting to global warming. To overcome these global challenges, governments can intervene by incentivizing or even forcing the adoption of green technologies and renewable energies.

The goal is to reduce reliance on fossil fuels and counteract the environmental impacts associated with their extraction and combustion. The implementation, though necessary, must be at a pace where all countries can follow, so that member states reliant on their oil and gas economy will not face an economic crisis. Rather, the transition must occur step by step: by diversifying the economy, countries can provide political and economic stability enabling progressive transition to a more sustainable economy and future. To advocate for and implement these new technologies in economies, it is also important to collect data, develop innovations in renewable energy technologies and enhance their reliability, efficiency, affordability, and scalability.

VIII. Questions to Consider

- How can LEDCs that are reliant on their gas and oil exports become sustainable ?
- How should or can the governments influence their economy and companies? How hard should these government interventions be?
- How can you reduce oil and gas consumption without facing economic disaster?
- How can the international community ensure the implementation of the plan of action for sustainable development (SDGs) and the goals set by the Paris Climate Agreements?
- Should governments be held accountable for lacking environmental protection, for example on the basis of human rights? In front of court? Even in times of war or crisis?

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