



*Waves of Change*  
*CalsMUN 2024*

**Research Report**

**Forum:** UNEP

**Issue:** Addressing the Environmental  
Impacts of Oil Exploitation and Production

**Chairs:** Loran Odabas, Emilie Buijtendijk  
and Yoshita Jain



## Introduction and overview

Oil exploitation and production have transformed the global economy, powering industries, transportation and contribute to the evolution of modern civilisation. However, the extraction and utilisation of oil reserves have led to profound environmental impacts such as biodiversity loss, climate change, water and air pollution, and ecosystem degradation. Addressing these complicated environmental challenges requires a rounded approach that includes balancing the energy needs with environmental sustainability, technological innovation and regulatory frameworks.

## Environmental Impacts of Oil Exploitation

Extracting oil from natural reserves involves several different interconnected processes, each with its own environmental consequences. Drilling, extraction, transportation and refining are all operations necessary for oil production. However, they often result in biodiversity destruction, soil degradation and disruption of ecosystems in sensitive regions or biomes such as forests, wetlands and marine environments. Getting the land cleared for oil exploration and development of infrastructure leads to deforestation, impacting biodiversity and fragmenting habitats, and hence threatening numerous plant and animal species.

## Climate Change and Greenhouse Gas Emissions

One of the most significant environmental concerns from oil exploitation is the emission of greenhouse gases and their contribution to climate change. Combustion of fossil fuels, including oil emits carbon dioxide, methane and other pollutants into the atmosphere, enhancing the greenhouse effect and global warming. This results in climate disruptions such as rising sea levels, extreme weather events, altered precipitation patterns, and disruptions in ecosystems worldwide. This can create significant challenges to vulnerable communities and biodiversity.

## Water and Air Pollution

The processes for oil extraction and production lead to water pollution through spillage, leakage and inadequate wastewater management. Not only do oil spills contaminate water bodies, but they also have devastating effects of aquatic life. This leads to disrupted food chains and long-term ecological damage. Additionally, another by-product of oil related activities is air pollution. Emissions of volatile organic compounds, nitrogen oxide, sulphur dioxide and particulate matter contributes to the formation of smog and adverse health effects in surrounding environments.

## **Technological Innovations and Mitigation Strategies**

Using innovative technologies and sustainable practices is necessary to address the environmental impacts of oil exploitation. Advancements in extraction techniques, such as oil recovery methods, improved drilling technologies and the rapid increase in the use of cleaner fuels aim to reduce environmental footprints while sustaining resource allocation and utilisation to its optimal point. Furthermore, renewable energy alternatives and investments in clean energy technologies offer promising returns for transitioning away from fossil fuels. This would lead to positive consequences such as mitigation of climate change and curbing the environmental degradation.

## **Policy Frameworks and International Collaboration**

The creation and execution of the policy frameworks are essential to justify and re-evaluate the environmental impacts of oil exploitation. International agreements seek to limit global temperature rise by curbing greenhouse gases emissions, and hence, influencing national policies and encouraging the use of renewable energy. Collaboration between governments, industry stakeholders and environmental organisations is crucial to develop and enforce legislations and regulations that promote sustainable practices and hold the respective people accountable for environmental damage.

## **Definition of Key Terms**

### **Petroleum**

One of the fossil fuels. Petroleum is a flammable liquid consisting of a mixture of hydrocarbons formed over millions of years from organic marine debris deposited on the seabed, mainly dead plankton.

### **Climate change**

A long-term shift in weather and temperatures

### **Greenhouse effect**

The process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gasses and then emitted in all directions. As some of it is returned to the Earth's surface, the surface temperature rises.

## **Major Parties Involved**

### **Oil Corporations:**

Oil corporations are the corporations that drill for oil and export it to different countries and other corporations. These companies, though acting with much care, cause many oil spills as well and play a huge role in the negative environmental impact.

### **United Nations (UN):**

The United Nations is a band of countries working together to make the world a better place through 17 preset goals for the future. They aim to keep peace on our planet and make sure everybody is equal. They have made a big difference in decreasing the amount of oil pollution and oil production.

### **Paris Agreement:**

The Paris Agreement is a legally binding international treaty on climate change. In the fight against climate change all nations involved for the first time agreed to shift away from fossil fuels and quickly increase their use of renewable energy.

### **Convention on Biological Diversity (CBD):**

The Convention on Biological Diversity (CBD) is the international legal framework for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources" that was accepted by 196 nations. (Nations, 2020) The overall objective of the Convention was to encourage steps taken towards a sustainable future. It focused on retaining and conserving biodiversity.

### **United Nations Framework Convention on Climate Change UNFCCC**

The UNFCCC is a group of 198 countries that work together to prevent any dangerous interference with the environment and the climate system by humans.

## **Countries with significant progress**

### **Norway:**

Norway has set a goal to significantly decrease their greenhouse gas emissions by 2050 which they are well on their way to. As Norway is considered an energy rich country it already has a head start and is making major advancements towards becoming more sustainable and renewable. Yet, Norway is also a major gas and oil producer, being named the 7th largest natural gas producer in the world. To balance this out, Norway's electricity is 93% covered by hydropower which powers almost the entire country. Though the countries

carbon footprint is already considerably low, the country is making considerable efforts to reduce their carbon footprint especially associated with the oil industry.

### **United States:**

The United States is a huge oil producer and truly struggles with the amount of greenhouse gasses it produces. Yet, in order to reduce that, they have implemented many acts such as the Oil Pollution Act and beginning of this December, the Final Rule. This was implemented by the Environmental Protection Agency and approved by Biden to try and reduce the amount of Methan gas that is released into the atmosphere through oil production. The rule was presented in the United Arab Emirates at the recent UN Climate Conference accepted by 50 oil companies which are responsible for almost half of the oil production of the world. By 2030 they aim to reduce their methan emissions to zero. These acts were implemented due to the all-time high of oil production in October this year creating the fear that climate change may not be reversible.

### **Canada:**

Between 2009 and 2015, Canada's gas emissions due to producing oil and gas rose by almost 20% leading them astray from their path towards sustainability. While Canada has many policies already, they aren't enough to properly bring Canada towards its goal calling for further legislations to be implemented. Due to the Ukrainian and Russian war, oil and gas demands have skyrocketed, making it difficult for Canada to decrease its production, yet the demand has already significantly decreased since 2005, leaving Canada at a much lower gas emission level and en route towards net zero in 2050. In July of 2023 the Inefficient Fossil Fuel Subsidies Government of Canada Self-Review Assessment Framework and the Inefficient Fossil Fuel Subsidies Government of Canada Guidelines were released. These guidelines were released for the purpose of bringing Canada to its net-zero goal for 2050.

## **Biggest contributors to oil production**

### **Nigeria:**

In Nigeria, the largest gas reserve of the continent can be found with its exports increasing significant amounts in the last 23 years. As of 2022 Nigeria exported approximately 32.2 billion cubic meters of natural gas. Still to this day, Nigeria has 202 trillion cubic feet of gas reserves that have been left untouched. While their government has released multiple bills and set up multiple regulations, the oil industry still takes up 6.63% of the country's total GDP and contributes to 65% of the government's total revenue. On top of that, Nigeria's inadequate infrastructure and countless oil companies have led to many spills over the years largely contributing to a ton of environmental damage. In just two years from 2020 to 2021, 822 oil spills were reported to have happened in Nigeria with 28,000 barrels of oil spilled. These oil spills have led to a lot of negative impacts on local communities making Nigeria a huge contributor in oil spills and environmental damages.

## Russia:

Oil is known as the second largest oil producer in the world with the world's largest gas reserves. In 2021 Russia exported 210 billion cubic meters (bcm) of natural gas and produced around 762 bcm of natural gas. Due to its high amount of oil production, Russia has also had many oil spills over the years. In 2019, 17,000 oil spills were recorded almost all of them from the pipeline. This means that every half hour in Russia an oil spill occurs. The pipeline in Russia is also one of the longest in the world. As these oil spills occur around the arctic area of Russia, the arctic ecosystems are heavily affected messing with the balance and working towards the extinction of many arctic animals. To compensate for the extreme amounts of damage these oil spills do to the environment, Russia has worked together with Greenpeace to increase the amount of check-ups done on oil drilling machines and overall decrease the amount of oil spills occurring.

## Venezuela:

Venezuela is a large oil producing country with more than enough oil reserves standing at more than 300,000 crude oil reserves and about 5,000 natural gas reserves. This large number of reserves results in multiple oil spills happening over time. In 2022 there were up to 86 oil spills and gas leaks. These spills are often a result of little to no check-ups on the pipelines and overall inadequate infrastructure contributing to majorly negative effects on the environment. Unfortunately, Venezuela has no regulations in place controlling their oil production and exports.

## Timeline of key events:

### 1969:

#### Santa Barbara Oil Spill

From Jan 28th to February 7th, the third largest oil spill in United States history occurred in Santa Barbara. This spill sent around 3 million gallons of crude oil into the ocean which started the ball rolling for the modern environmental movement and largely influenced the gal and oil exploration in California. The spill spread to approximately an 800 square miles radius with many of the island off the coast of California being covered in black goo. This area then became the base of the most important conservation efforts in the 20th century. This oil spill was the sole reason anybody in the United States learned about the environmental impacts of oil spills.

## 1970:

### Establishment of the United States Environmental Protection Agency (EPA)

After the oil spill in 1969 people started realising the dire situation at hand and the catastrophic consequences of pollution. The conversation about protecting the environment started in 1960 but wasn't recognised as relevant until after the oil spill. After many events affecting the environment, the issue reached President Nixon, causing him to present a 37-point message to the environment including a new agency which would cover multiple responsibilities at the same time. The agency was meant to research and regulate the environment, support businesses looking to reduce the amount of pollution they were releasing and more.

## 1972:

### United Nations Conference on the Human Environment

The first global conference acknowledging the environment as a critical concern took place in Stockholm in 1972. There were 26 principles in the declaration, most of which dealt with the environment and how it was being damaged. These were further discussed. The United Nations Environment Programme (UNEP), which was established to assist nations in lowering their carbon emissions and protecting ecosystems, was also established during this conference.

## 1989:

### Exxon Valdez Oil Spill

On March 24th, 1989, an oil tanker near William Sound Alaska called the Exxon Valdez spilled 11 million gallons of oil into the ocean. As it was early spring, the area was ecologically sensitive and the amount of oil spilled was devastatingly large, this event became one of the largest environmental disasters in the history of the United States. The spill killed at least 20,000 seabirds, 3,000 sea otters, 300 harbour seals, 250 bald eagles, millions of salmon and up to 22 killer whales. Up to 25 years after the spill, the impacts are still recognisable. This oil spill was the reason the impacts of oil spills on ecosystems and wildlife is so widely known today as it educated the world.

## 1990:

### Oil Pollution Act (OPA) in the United States

The OPA of the United States was an act that helped the United States prevent any major spills from happening again, and to prepare the United States for any major spills that might

happen. The OPA works with trust funds and the coast guard to clean up major oil spills that the company itself doesn't want to pay for. Yet, the act tries to emphasise liability and demands compensation from the parties involved.

## **1992:**

Rio Earth Summit - United Nations Conference on Environment and Development (UNCED)

This conference was held from 3-14th of June in 1992, on the 20th anniversary of the Stockholm conference. It brought together many representatives and important people from 179 countries and discussed the economic social and political impacts of all decisions regarding the environment. In addition, an agenda and a blueprint were made to guide international cooperation and action regarding the environment. The conference ended with the revelation that a sustainable life was possible for every country regardless of any limiting factors. During the conference, Agenda 21 was adopted, and many other achievements were achieved such as the creation of the UNFCCC, the Rio Declaration and the Commission on Sustainable Development.

## **1997:**

Kyoto Protocol

In Kyoto in 1997 the Kyoto Protocol was formed a legal framework that would reduce the amount of fossil fuels and greenhouse gas emissions. The protocol focused on all the countries part of the UNFCCC except the still developing countries such as India, Brazil and China. In the legal framework, there were limits for the greenhouse gas emissions per country which would allegedly bring down the overall greenhouse gas emissions in the world. The goal was to reduce the greenhouse gas emissions from 2008-2012, which sadly wasn't achieved.

## **2010:**

Deepwater Horizon Oil Spill

The Deepwater Horizon Oil Spill happened in the Gulf of Mexico from April 20th to September 19th, 2010. Now it is known as the largest marine oil spill in history. The oil spill was caused by an explosion off the coast of Louisiana, causing the Deepwater Horizon oil rig to eventually sink. The explosion started on April 20th when a surge of natural gas burst through a concrete core, rose to the top and ignited killing 11 workers and injuring 17. Although the leak was quickly noticed and about 800,000 oil barrels were saved, 4,900,000



barrels of oil made it into the ocean. This oil spill saved many lives as it emphasised the need for improved safety in offshore drilling.

## **2011:**

### United Nations Guiding Principles on Business and Human Rights

The UN guiding principles were written by the Special Representative of the Secretary-General for the Human Rights committee and details the principles business's such as oil companies should follow in order to respect human rights and prevent environmental harm. In addition to that, the report details the need for just and equal measures taken if the principles written in the report are breached. The guiding principles were endorsed by the human rights committee in its resolution of 2011.

## **2015:**

### Paris Agreement

On 12th of December 2015, in Paris, the United Nations Framework Convention on Climate Change (UNFCCC) came to an agreement that climate change needed to be focused on more. The main focuses of this agreement were the effects of climate change especially the temperature increase, education on climate change, full transparency from all member states, and the conservation of sinks and reservoirs. On top of that the agreement focuses on shifting towards cleaner energy sources and reducing the dependence on fossil fuels. The Paris Agreement aims to strengthen the world to be able to adapt to the effects of climate change.

## **2016-2017:**

### Dakota Access Pipeline Protests

The Dakota Access Pipeline Protests were multiple protests done by Native Americans aimed to stop the construction of the Dakota Access Pipeline. The protests began in the beginning of 2016 when the Pipeline originally started to get built. The pipeline starts from the Bakken Oil Fields in North Dakota, under the Missouri and Mississippi rivers and under Lake Oahe close to the Standing Rock Indian Reservation. At the end of 2016, more protestors started coming to the pipeline. In November of 2016, the police used water cannons full of freezing water on the protestors gaining them a lot of media attention. Even after much media attention and high-profile activists coming to the scene, the pipeline continued to be built and finished construction in 2017. The pipeline still runs today.

## 2020:

### Oil Price Crash and COVID-19 Pandemic

From March 6th to April 28th, the impact of COVID-19 impacted the prices of oil significantly. The prices plunged even to the negatives in some states due to the overwhelming decrease in oil demand due to the lock down. Oil companies were struggling to sell their crude oil barrels and had no more space to store the already existing barrels they couldn't get rid of. Though the price drop to the negatives only lasted around a month, it was unclear whether the oil companies would be able to recover in 2020. It started the discussion whether renewable energy was more practical.

## 2021:

### United Nations Environment Assembly (UNEA) Resolutions on the Environmental Impacts

This was the 5th United Nations Environment Assembly ever which took place in Nairobi Kenya. During the meeting, 12 resolutions were passed and 2 were all detailing ways to better the environment. The resolutions aimed to achieve the Sustainable Development Goals (SDGs) by 2030.

## 2023:

### Increased Focus on Renewable Energy

The United States aims to decrease the amount of greenhouse gas emissions, by using as much renewable energy as possible. By the end of 2023, utility-scale solar installations are expected to more than double to a record-breaking 24 GW, according to US Energy Information Administration projections, while wind capacity will increase by 8 GW. This will significantly decrease the greenhouse gas emissions and helps us move towards a more sustainable future.

## Previous attempts to solve the issue

### The Paris agreement (2015)

The Paris agreement is a legally binding agreement signed by 196 member states. It aims to prevent climate change by preventing global warming.

## **Oil pollution act (1990)**

The oil pollution act (OPA) is a United States' act that makes sure that there is a trust fund for whenever there is a major oil spill, and the responsible party is unable or unwilling to clean it up

## **Oil and gas climate initiative (2014)**

The Oil and gas climate initiative (OGCI) is a CEO-lead initiative to reach the zero-net that is consistent with the Paris agreement. It has 12 members but works with many more companies to try and reach this goal.

## **Possible Solutions**

Stricter environmental regulations should be employed to control over oil production and transportation. Legislations including waste management to minimise spills, emissions and pollutions should also be enforced. Stronger enforcement mechanisms such as penalties and fines should be pushed to ensure accountability and compliance from producers and consumers.

Sustainable technologies for oil extraction, refining and transportation should be adopted to minimise environmental impacts. Research and development about cleaner extraction methods and renewable energy sources should be supported to reduce reliance on fossil fuels.

Information and effective practices should be shared among nations especially between countries with successful environmental policies and those facing challenges. Collaborative efforts, workshops and conferences could be organised platforms to share technological advancements and policies that promote sustainable oil production.

Local communities affected by oil exploitation should be empowered by involving them in decision-making processes and ensuring their voices are heard. Oil companies should be encouraged to engage in community development initiatives such as education and health to balance the negative impacts of oil production on local populations.

Gradual yet efficient shifts from fossil fuels to renewable energy should be advocated through promotional investments and strict policies. Encourage member nations to set targets for renewable energy usage and support initiatives to achieve that goal.

A monitoring and reporting logging system should be established and employed to track the environmental impact of oil production. Standardised reporting criteria and framework

should be created for oil companies to disclose their environmental footprints. This should be followed by a plan of amends and changes they make to reduce the footprint.

Educational campaigns and awareness programs should be organised to highlight the environmental consequences of oil exploitation. This could also take part in environmental studies and sustainable practices through collaboration with educational institutions and NGOs.

## Bibliography

Mai-Duc, C. (2015). *1969 Santa Barbara oil spill changed oil and gas exploration forever*. [online] Los Angeles Times. Available at: <https://www.latimes.com/local/lanow/la-me-ln-santa-barbara-oil-spill-1969-20150520-htmlstory.html> [Accessed 17 Dec. 2023].

<https://www.facebook.com/Treehugger> (2021). *The Santa Barbara Oil Spill: History and Impact*. [online] Treehugger. Available at: <https://www.treehugger.com/santa-barbara-oil-spill-history-and-impact-5184137> [Accessed 17 Dec. 2023].

Unfccc.int. (2020). *Key aspects of the Paris Agreement | UNFCCC*. [online] Available at: <https://unfccc.int/most-requested/key-aspects-of-the-paris-agreement> [Accessed 19 Dec. 2023].

Nations, U. (2023). *The Paris Agreement | United Nations*. [online] United Nations. Available at: <https://www.un.org/en/climatechange/paris-agreement> [Accessed 19 Dec. 2023].

Nations, U. (2013). *United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992 | United Nations*. [online] United Nations. Available at: <https://www.un.org/en/conferences/environment/rio1992> [Accessed 20 Dec. 2023].

Wikipedia Contributors (2023). *Dakota Access Pipeline protests*. [online] Wikipedia. Available at: [https://en.wikipedia.org/wiki/Dakota\\_Access\\_Pipeline\\_protests](https://en.wikipedia.org/wiki/Dakota_Access_Pipeline_protests) [Accessed 20 Dec. 2023].

Nations, U. (2013). *United Nations Conference on the Human Environment, Stockholm 1972 | United Nations*. [online] United Nations. Available at: <https://www.un.org/en/conferences/environment/stockholm1972> [Accessed 20 Dec. 2023].

Noaa.gov. (2020). *Exxon Valdez | Oil Spills | Damage Assessment, Remediation, and Restoration Program*. [online] Available at: <https://darrp.noaa.gov/oil-spills/exxon-valdez> [Accessed 20 Dec. 2023].

Nations, U. (2013). *United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992 | United Nations*. [online] United Nations. Available at: <https://www.un.org/en/conferences/environment/rio1992> [Accessed 20 Dec. 2023].

Emissionsauthority.nl. (2017). *The Kyoto Protocol*. [online] Available at: <https://www.emissionsauthority.nl/topics/kyoto-protocol#:~:text=The%20Kyoto%20Protocol>

[%20was%20created,1%20countries'%20under%20the%20Protocol](#). [Accessed 20 Dec. 2023].

Deepwater Horizon oil spill | Summary, Effects, Cause, Clean Up, & Facts | Britannica. (2023). In: *Encyclopædia Britannica*. [online] Available at: <https://www.britannica.com/event/Deepwater-Horizon-oil-spill> [Accessed 20 Dec. 2023].

Investopedia. (2023). *What Happened to Oil Prices in 2020*. [online] Available at: <https://www.investopedia.com/articles/investing/100615/will-oil-prices-go-2017.asp> [Accessed 20 Dec. 2023].

Deloitte Insights. (2023). *2024 renewable energy industry outlook*. [online] Available at: <https://www2.deloitte.com/us/en/insights/industry/renewable-energy/renewable-energy-industry-outlook.html> [Accessed 20 Dec. 2023].

Nations, U. (2020). *Convention on Biodiversity | United Nations*. [online] United Nations. Available at: <https://www.un.org/en/observances/biological-diversity-day/convention#:~:text=The%20Convention%20on%20Biological%20Diversity,been%20ratified%20by%20196%20nations>. [Accessed 20 Dec. 2023].

Norway (2022). *Executive summary – Norway 2022 – Analysis - IEA*. [online] IEA. Available at: <https://www.iea.org/reports/norway-2022/executive-summary> [Accessed 20 Dec. 2023].

DALY, M. (2023). *U.S. Targets Oil and Natural Gas Industry's Role in Global Warming With New Final Rule*. [online] TIME. Available at: <https://time.com/6342058/us-oil-natural-gas-industrys-global-warming/> [Accessed 20 Dec. 2023].

PBS NewsHour (2023). *U.S. oil production hits all-time high, conflicting with efforts to curb climate change*. [online] PBS NewsHour. Available at: <https://www.pbs.org/newshour/politics/u-s-oil-production-hits-all-time-high-conflicting-with-efforts-to-curb-climate-change> [Accessed 20 Dec. 2023].

Canadian Climate Institute. (2023). *The Future of Oil and Gas Production in Canada - Canadian Climate Institute*. [online] Available at: <https://climateinstitute.ca/the-future-of-oil-and-gas-production-in-canada/> [Accessed 20 Dec. 2023].

E. (2023). *Government of Canada delivers on key climate commitment to phase out inefficient fossil fuel subsidies*. [online] Canada.ca. Available at: <https://www.canada.ca/en/environment-climate-change/news/2023/07/government-of-canada-delivers-on-key-climate-commitment-to-phase-out-inefficient-fossil-fuel-subsidies.html> [Accessed 20 Dec. 2023].

Statista. (2022). *Nigeria: proved natural gas reserves 2022 | Statista*. [online] Available at: <https://www.statista.com/statistics/1387331/proved-natural-gas-reserves-in-nigeria/#:~:text=Nigeria%20holds%20the%20largest%20natural,by%20the%20West%2DAfrican%20country> . [Accessed 20 Dec. 2023].

admin (2023). *LAWS REGULATING OIL AND GAS INDUSTRY IN NIGERIA - SIAO*. [online] SIAO. Available at: <https://siao.ng/laws-regulating-oil-and-gas-industry-in-nigeria/> [Accessed 20 Dec. 2023].

Ajayi, W. (2019). *Nigerian Oil and Gas Update*. [online] KPMG. Available at: <https://kpmg.com/ng/en/home/insights/2019/04/Nigerian-Oil-and-Gas-Update.html> [Accessed 20 Dec. 2023].

Guardian Nigeria (2023). *World Energy review reveals slump in Nigeria's gas production* | *The Guardian Nigeria News - Nigeria and World News*. [online] The Guardian Nigeria News - Nigeria and World News. Available at: <https://guardian.ng/business-services/business/world-energy-review-reveals-slump-in-nigeria-gas-production/#:~:text=The%20production%20remained%20relatively%20stable.cubic%20meters%2C%E2%80%9D%20it%20stated.> [Accessed 20 Dec. 2023].

Evaluating Nigeria's Gas Value Chain. (n.d.). Available at: <https://www.pwc.com/ng/en/assets/pdf/evaluating-nigeria-gas-value-chain.pdf>.

Kondratenko, T. (2021). *Russia: A country of oil spills*. [online] dw.com. Available at: <https://www.dw.com/en/russia-oil-spills-far-north/a-56916148#:~:text=According%20to%20the%20Russian%20Ministry,Russia%20almost%20every%20half%20hour.> [Accessed 20 Dec. 2023].

Reuters (2023). *Oil spill in Russia's north threatens 'major damage' to environment*. [online] Reuters. Available at: <https://www.reuters.com/world/europe/oil-spill-russias-north-threatens-major-damage-environment-2023-07-03/> [Accessed 20 Dec. 2023].

Russia - Countries & Regions - IEA (2023). *Russia - Countries & Regions - IEA*. [online] IEA. Available at: <https://www.iea.org/countries/russia> [Accessed 20 Dec. 2023].

Maxradwin (2023). *Venezuela's oil spill crisis reached new heights in 2022: report*. [online] Mongabay Environmental News. Available at: <https://news.mongabay.com/2023/01/venezuelas-oil-spill-crisis-reached-new-heights-in-2022-report/> [Accessed 20 Dec. 2023].

Opec.org. (2021). OPEC : Venezuela. [online] Available at: [https://www.opec.org/opec\\_web/en/about\\_us/171.htm](https://www.opec.org/opec_web/en/about_us/171.htm) [Accessed 20 Dec. 2023].

Otis, J. (2023). *Oil spills increase in Venezuela as it revs up output after the U.S. lifted sanctions*. [online] NPR. Available at: <https://www.npr.org/2023/11/29/1215547427/venezuela-oil-spill-maracaibo#:~:text=Otis%20for%20NPR-.Due%20to%20a%20lack%20of%20maintenance%20and%20supervision%20and%20aging.lifting%20of%20U.S.%20oil%20sanctions.> [Accessed 20 Dec. 2023].

Appendix:

Guiding Principles on Business and Human Rights

[https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinessshr\\_en.pdf](https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinessshr_en.pdf)

Oil pollution act

[https://www.epa.gov/laws-regulations/summary-oil-pollution-act#:~:text=\(1990\),or%20unwilling%20to%20do%20so.](https://www.epa.gov/laws-regulations/summary-oil-pollution-act#:~:text=(1990),or%20unwilling%20to%20do%20so.)

Paris agreement

<https://unfccc.int/process-and-meetings/the-paris-agreement>

Oil and gas climate initiative

<https://www.ogci.com/>