Reducing Side Effects of Oil and Gas Extraction

Committee Guide

United Nations Environment Programme
Governing Council

OLMUN 2019
19th International Session

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1.Personal Introduction

Dear delegates,

My name is Tristan Leoluca Farinella, I am 17 years old and happy to introduce myself as President of the United Nations Environment Programme at this year's OLMUN. I'm currently attending the eleventh grade at the Altes Gymnasium Oldenburg. This year's conference will be my third MUN and my first conference as a chair. Besides OLMUN, I do a lot of things. Youth group leadership, student representation and sports are my biggest dedications. Among other things, I also design workshops and educational trips for young people. That's a lot of fun for me.
I am also looking forward to all of you, the entire conference and all fruitful discussions. A hint from me: Have fun and meet a lot of new people.

Sincerely,
Tristan Leoluca Farinella

Dear delegates of this year's United Nations Environment Programme,

First of all, it's a pleasure to me to welcome all of you at OLMUN 2019! My name is Judith Kramer and I graduated from the Herbartgymnasium Oldenburg last summer. Since September 2018 I have been volunteering at an educational facility aligned to ecology and sustainability. My daily work consists of conducting workshops for children and teenagers where subjects such as environmental and climate protection are tackled.
This year will be my first time participating in OLMUN. Nevertheless, I was already able to gain MUN experience at my school's German MUN. There I took part four times, once as Delegate, twice as a Chair and last year I was voted Secretary General.
As young people, like us, are essential for composing our future, I am convinced of the necessity of understanding political procedures and decision-making processes. To my mind OLMUN is one of the greatest ways to approach these topics while having the opportunity to make new friends and have so much fun. I am eager to get to know all of you and your ideas and thoughts at this year's conference!

Yours sincerely,
Judith Kramer

2. Committee Introduction

“Our mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.”
This guide shall give you, dear delegates, first impressions and ideas about this year’s topic “Reducing side effects of oil and gas extraction”. But before tackling this particular issue, general knowledge about the committee itself is needed to clear out misunderstandings and to provide successful debates.
The quote above is the council’s declared mission. Founded in Nairobi, Kenia in 1972 at the United Nations Conference on the Human Environment, the UNEP was supposed to become an organization where actions against environmental and industrial pollution should be taken.

The United Nations Environment Programme is charged with several tasks, such as:

- Collecting and evaluating data concerning global and local environmental developments. Thus, the UNEP focuses on e.g. air pollution, climate change, desertification as well as species extinction.
- Creating platforms where most of today’s valid international contracts concerning our environment have been signed.
- Advising and strengthening organizations and institutions interested in acting eco-friendly. This also implies sharing technology and knowledge, which is essential for sustainable development.
- Encouraging more in-depth conversation between private companies and civil society in order to strengthen both parties’ co-operation when it comes to environmental protection.

Because of these far-reaching tasks the UNEP can be seen as the leading global environmental authority. The council has 58 member states being re-elected every three years, whereby the most important ones remain in the committee permanently. At the moment, the UNEP is chaired by executive director Inger Andersen.

3. Understanding the Topic

This year’s topic will be “Reducing side effects of oil and gas extraction”. In order to debate successfully at this conference, it is necessary to understand why oil and gas extraction is such an important topic, how it works and what possible side effects can appear. The following paragraphs will give you first information about that. While writing a policy statement and draft resolution in preparation for the conference, please take into account that your country might have different definitions or opinions concerning the topic.

3.1 Oil and Gas Extraction in General

Natural gas and natural oil, or simply gas and oil, both are so called fossil fuels. The formation process took place millions of years ago. Oil and gas have been formed from a large amount of tiny animals and plants such as zooplankton and algae. Once they die these organisms sink to the bottom of the sea and then get trapped under multiple layers of mud and sand. As time goes by, heat and pressure had begun to rise thus these organisms were buried deeper and deeper below the surface. Depending on the amount of heat, pressure and type of organisms either natural gas or oil is formed.

As regarded worldwide, oil and gas are still the most important energy sources these days. About half of the global energy demand is covered by these two fossil fuels.

When it comes to conventional extraction of oil and gas, there are three different stages of recovery. During the “primary recovery stage” the natural underground pressure which drives fluids or gases to the surface is utilized. Oil and gas are moving so to say automatically to the surface. Primary recovery often reaches only 10 percent of the oil in a deposit. When the natural underground pressure decreases and no more oil reaches the surface, it is time to move on to “secondary recovery stage”. During this stage water or gas is squeezed into the earth, where oil or gas is stored. In order to do so, additional holes must be drilled in most cases. By squeezing in fluids, such as water, underground pressure is increased again, and the fossil fuels move up again. Depending on different research sources, methods used in secondary recovery can reach 30-40 percent or even up to 60 percent of the oil or gas stored in the deposit. “Tertiary recovery” is used to increase the amount of oil extracted additionally. Like at the second stage fluid or gas is squeezed into the deposit, for example nitrogen or carbon dioxide.

When the conventional method to extract oil and gas as described above cannot be used owing to the soil composition, another procedure called fracking is utilized. It is a technique to recover oil and gas from shale rock. During the process a mixture of water, sand and chemicals is injected into the rock at high pressure through a formerly made drilling. This allows the gas or oil to flow up to the surface. The term fracking refers to how the rock is fractured apart by the high-pressure mixture.

As a huge part of the global oil deposits are located under the bottom of the sea, offshore drilling becomes more and more popular. Recovery from these deposits is likely to cause difficulties, as floating oil platforms must be constructed and under water pipelines need to be built.
The three countries, which have been extracting most oil and gas in 2018 have been firstly the USA, secondly Russia and thirdly Saudi-Arabia.

3.2 Side Effects of Oil and Gas Extraction

Natural oil and gas extraction have many devastating side effects. It is likely to be forgotten but not only extraction itself causes harmful by-effects. The moment a company scouts a potential new drilling site, they damage the sensitive local ecosystem and connected habitats of animals by building access roads and doing seismic tests. This is specifically the case in thinly populated regions. Seismic tests can especially harm fish populations at the current place, since it involves sending out certain sound frequencies which confuse or even kill animals.

When a potential drilling site appears promising recovery, facilities have to be built, as well as roads, accommodations for workforce and pipelines to transport the oil and gas extracted. This damages the local environment irreversibly and for sure, occupies a huge area. To provide the space needed woodland has to be cleared. In the wood there is stored carbon dioxide, a greenhouse gas, which then is released into the atmosphere. In Canada companies practice a method to extract natural oil with particularly high emission rates because of deforestation and carbon dioxide entering the atmosphere. On an area bigger than England (149.000 square kilometers) woodland has been cleared to extract oil out of the underlying soil and turf. It is planned to do the same at the northern forests of Canada. In total around 8.73 billion tons of carbon dioxide are stored in this wood.

During recovery of oil and gas another fuel gas is automatically released. Since this gas is of no value to the gas companies, they simply burn it. This process is called “flaring”. The products of this process are carbon dioxide, sulphur dioxide, nitric oxides and cancer-causing soot. All these gases are polluting the atmosphere massively and cause further damage of the environment.

Another side effect is environmental pollution caused by drain water, which is led into lakes or rivers near the drilling site. But not only drain water contaminates the environment. Leaks in pipelines or accidents at recovery facilities cause immense and above all irrevocable environmental damage, since one drop of oil can pollute 600 to 1000 liters of water, depending on what kind of oil leaked out. Environmental disasters like that are very likely to happen at offshore oil platforms. Often enough it has already happened, like back in 2010 as the oil platform “Deep Water Horizon” burnt down and caused a fatal oil spill in the Gulf of Mexico. The aftermaths are still visible today.

Because of progress in technology new recovery methods like fracking are developed. However, fracking is debated very controversially owing to its side effects, which have not been fully investigated yet. A possible by-effect can be one or several earthquakes, as the earth is fractured apart by great force. Furthermore, environmentalists argue potentially carcinogenic chemicals used in the drilling process may escape and contaminate groundwater. Additionally, fracking requires a huge amount of water, which must be transported to the drilling site at significant environmental costs.

What is more, activists argue that newly developed methods like fracking are distracting energy companies and governments from investing in renewable sources of energy. To the contrary the chance to be able to explore even unconventional drilling site, where recovery did seem impossible, encourages continued reliance on fossil fuels.

4 Possible Solutions to the Problem

4.1 Natural Gases

The drilling and extraction of fossil fuels carry many risks. In order to restrain the aftermaths of drilling, decommissioned drilling stations must also be monitored by the companies themselves, as well as by independent organizations. They are officially considered sealed but can still release thousands of tons of methane. The water depth is not deep enough in some places and thus up to more than 40 percent of the methane can reach the surface and even the atmosphere. Changing operational practices during maintenance and repair to reduce the volume of natural gas vented to the atmosphere when components are taken offline for maintenance or replacement and implementing inspection and maintenance programs can eliminate as much as 80% of fugitive methane emissions from leaks.

4.2 Fracking Water

Another point is pumping the water, which is contaminated with various chemicals, back into the shafts used for fracking. This contaminated water simply poses a too great risk to the vital groundwater. Purification could counteract.

4.3 Gas Flaring

Each year about 140 billion cubic meters of petroleum associated gases are flared. This corresponds to around 4.2 percent of the global production. Flaring releases CO2 (carbon dioxide) which has a 25 times lower greenhouse effect than CH4 (methane). While this is more environmentally friendly than simply releasing the gas, flaring releases tons of soot and limits the inhabitants of the affected regions by the poor air quality and the enormous noise pollution in their quality of living. This should rather be minimized. Even it's not climate-friendly flaring can be a good protective measure for compensating excess pressure though.

4.4 Impact on Villages

For the extension and establishment of oil and gas production sites, entire villages are bought up or expropriated. They are completely razed to the ground. In order to protect the history and culture of people and cities, it is worth preventing companies from buying up entire cities in order to harvest raw materials there.

4.5 Human Rights Violations

Not to be neglected is the violation of human rights in some production sites, especially in LEDCs. This can be prevented when companies and governments accept their responsibilities.

4.6 In General

As the most effective but also the most radical solution, the complete (and mandatory) phase-out of fossil energy production can of course be considered. Correlating aspects like jobs, energy supply and economic impact should not remain unnoticed.

4.7 UN Projects

The United Nations are demanding clean, renewable, affordable, sustainable and modern energy for all people with their 17 sustainable development goals that were adopted by all member states in 2015 and are a part of the Agenda 2030.This goal was reviewed in-depth at the high-level political forum of 2018.

5. General Information on Preparing for the Conference

In preparation for this year's OLMUN there are some important aspects to be mentioned. For all of you participating the first time, we strongly recommend you to read the official Handbook and the Rules of Procedure for OLMUN 2019. These include significant information on how to write a policy statement and draft resolution. In addition, you can find detailed information on the specific procedures at this year's conference. This might also be relevant for experienced MUN participants as OLMUN might differ from other MUN conferences you have already taken part in.

As already mentioned above, you have to prepare a **policy statement**, in which you state your country's position briefly as well as precisely, and a **draft resolution** before the conference takes place. To do that properly much more in-depth research on the topic itself and your country's position is inalienable. Please remember: This guide only provides basic and introductory information, so do not limit your research to this source. Additionally, it is crucial to use a variety of sources to form broad knowledge on the view hold in your particular country. The list of helpful resources and research links might be a starting point for your own research.

The position of your country regarding a certain political issue is called policy. Always bear in mind that whatever this policy might imply, you as your country's delegation have to represent this conviction. Your very own beliefs concerning the topic will not be relevant during your preparation and the actual conference as usual at MUN.

We would like you to hand in your policy statement and draft resolution until **June 2nd.** Please note that any delegate who sends these in too late or not at all will have to face consequences ☺.

From now on it is up to you: The better you prepare; the better this year's conference will be. For further information on the Conference Schedule or the Handbook and Rules of Procedure please visit our website (olmun.org) as these will be uploaded there.
If you have any questions concerning your preparatory work or the conference itself, please feel free to contact us (unep@olmun.org).
We are looking forward to getting to know all of you in June and hopefully together we will be part of a great OLMUN 2019.

Yours sincerely,

Tristan Leoluca Farinella and **Judith Kramer**
Presidents of the UNEP

6. Helpful Resources

Energy Research Architecture Report
The impact of fossil fuels

http://www.ebb-eu.org/EBBpressreleases/ERA%20Study%20Impact%20of%20fossil%20fuels%20final%20report.pdf

UCSUSA
The Hidden Costs Of Fossil Fuels

https://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/hidden-cost-of-fossils

For general research we recommend you to use the UNEP documents in addition to your studies.

https://apps.unep.org/repository/