HMUN 2020

Haarlem Model United Nations

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Issue:
Deciding on guidelines for extremely polluting industries

Forum:
Special Conference 1

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Introduction

This research report gives an introduction about the above-mentioned topic: 'Deciding on guidelines for extremely polluting industries'.
While preparing please keep in mind that this issue only concerns industries that directly pollute by emitting gasses and chemicals into the air and water, not necessarily industries that have a big ecological footprint such as the agricultural industry.

Ever since the industrial revolution in the 18th century came about, there has been exponential growth in almost all industries globally. This came paired with improved quality of life and was therefore at first only seen as a positive thing. However recently the downside of the rise of the industry has gotten more attention. These industries directly as well as indirectly create a lot of waste and need a lot of energy, which increases the need for burning coal and gas, emitting carbon dioxide in the air and water. World leaders prioritizing economic growth in favour of protecting the environment has a continued detrimental effect on eco systems worldwide and experts claim that it could have disastrous effects on humanity in the near future as well.

However, a large percentage of pollution can be traced back to just a few extremely polluting industries, such as the fossil fuel industry, the plastics/chemical industry and the fashion industry. These industries invest billions of dollars every year in lobbying against climate-protecting laws, which would reduce their freedom in terms of business and production which would mean less profit. All this lobbying makes sure these powerful industries can continue polluting without being penalised for it.

But as more and more scientists warn people about the consequences of their actions and the public opinion puts increasing pressure on politicians, the demand for solutions that put public health and safety before profit is ever intensifying.

Definition of Key Terms

Global warming - The gradual increase in the overall temperature of the earth's atmosphere due to the greenhouse effect caused by increased levels of carbon dioxide, CFCs, and other pollutants.

Climate change - Changes in the earth's weather, including changes in temperature, wind patterns, and rainfall, especially the increase in the temperature of the earth's atmosphere that is caused by the increase of greenhouse gases, especially carbon dioxide

Industrial revolution - The rapid development of industry that occurred in Britain in the late 18th and 19th centuries, brought about by the introduction of machinery.

Lobbyist - A person whose job involves trying to influence politicians or the government and, for example, persuade them to support or oppose a change in the law.

Greenhouse effect - The trapping of the sun's warmth in a planet's lower atmosphere due to the greater transparency of the atmosphere to visible radiation from the sun than to infrared radiation emitted from the planet's surface.

General Overview

When around the year 1760 the industrial revolution started, it had a major impact on the world, financially as well as ecologically. It improved the living standard of millions of people by creating job opportunities in cities. Previously most people worked on the land from dusk until dawn, doing hard physical labour. Starvation was omnipresent and one bad harvest could be fatal. Life expectancy was low, and diseases were widespread. The industrial revolution marked a significant upgrade in the average living standard. Factory workers earned living wages, which meant they could afford better food, better housing and more luxury, like pottery, utensils and tea. As a consequence, life expectancy began to rise as well. All in all, it was a huge improvement for almost everyone; leading to the abolishment of extreme poverty and curable diseases. This is something most people, especially in developed countries, still reap the benefits from to this day.

It was not until 1896 that the downsides of this revolution were discovered by Swedish chemist Svante Arrhenius. He became the first to quantify the role of carbon dioxide in the warming of the planet and noted that our burning of coal could cause a notable increase in carbon levels over centuries. Despite this, it is nearly a century later when world leaders start recognizing global warming as a problem and the United Nations (UN) sets up the Intergovernmental Panel on Climate Change (IPCC)

"to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.[1]"

However, industries have kept growing at unprecedented rates, causing mass deforestation, increases in livestock farming and enormous growth in the demand for energy. Most countries have done little to nothing to prevent this from happening, prioritizing economic growth over ecological stability through minimizing global warming; some politicians even denying climate change as a whole. But as awareness among the public increases, there is an increasing pressure from the public to tackle the problem of climate change, especially by the younger generations.

Numerous studies show that the effects of global warming can be traced back to just a few industries. The main contributor, the fossil fuel industry, is responsible for 59% of all global aerial emissions annually, with just 20 gas and coal companies being responsible for 35% of total emissions since 1965[2].
The oil and gas industry intend to spend $4.9 trillion over the next 10 years, exploring and developing new reserves[3]. Burning those would mean the Paris agreement will be impossible to meet. These numbers are not surprising, seeing as this industry is worth more than $6,5 trillion.

Another extremely pollutive industry is the mining and ore processing industry. The industry adversely affects the environment in several ways; one of which is air pollution. When mineral deposits are exposed on the surface through mining, unrefined materials can become airborne because of wind erosion and nearby traffic. These materials often include heavy metals, which can trigger diseases and allergies when inhaled.

Mining also causes water pollution, which includes increased sediment levels, metal contamination and acid mine drainage. This has major impacts on fishing, swimming, irrigation (and thus food supply) and water supply. It also adversely impacts aquatic ecosystems. This affects about 7 million people worldwide.

A very polluting industry that will be growing in the coming years is the used batteries industry. Batteries are used for a number of purposes, with the biggest one being electric motors in vehicles. Since the number of electric vehicles is expected to rise significantly, this may be one of the most important industries to focus on in terms of environmental regulations in the near future. The chemical waste from recycled batteries is often not disposed properly, especially in developing countries where

1 https://climateaudit.org/
2 www.theguardian.com
3 www.theguardian.com

safety measures are not yet applied. In these countries, the lead pollutes local soil and water supplies. This can cause surges in different types of diseases, such as cancer, and can hinder children's development.

More of the worst polluting industries can be found at http://www.worstpolluted.org/. The main pollutants are chemicals, particulates, and greenhouse gasses.

One of the major issues with these industries is that they make up large parts of the global economy and are responsible for economic growth in countries around the world. Many politicians and world leaders are not willing to prioritize taking measures to protect the environment over economic growth since it is less profitable in the short term. There is a conflict of interests between the planet and politicians because the latter need more short-term successes to get re-elected and therefore might underprioritize long term objectives. Even though the public is slowly starting to put more pressure on governments to focus on the health of the planet, it is not going to be fast enough to prevent the 2°C of global warming scientists have been warning the public about. And even if politicians are willing to try, these industries are investing so much money in lobbying that it is nearly impossible to create impactful laws and other measures. This has been going on since 1988, when climate change was first perceived as a problem, but as a result of our collective inaction, scientists believe we only have 10 years to cut global CO2 emissions by 45%. Reaching this would mean fundamental changes in the economies of most countries in the world. The fossil fuel industry would have to be diminished, while the renewable energy sector would have to grow exponentially to keep up with rising energy demands. The meat industry will have to severely decrease in size, which could give alternate industries, like the lab-grown meat industry more space to develop. The fashion industry will have to severely cut down on the amount of products they produce. In short, the consuming society that has been created over the last few decades in developed countries will have to change severely.

Major Parties Involved

- **China**

Because of China's war on poverty, millions of people moved from rural areas to cities. There the government created jobs in factories, helping millions of residents out of poverty by giving them the opportunity to earn wages. However, as a result of this industrialisation, the demand for energy rose significantly, as did the number of cars on the road. This turn had a major impact on how much pollution China emitted as a country, making them one of the most polluting countries in the world.

China National Coal group, a 100% state owned company, is the single biggest greenhouse gas emitting company in the world[4].

To combat this, China has declared a war on pollution in March of 2014. They are achieving their goals at a record pace; "Cities have cut concentrations of fine particulates in the air by 32 percent on average, in just those four years[5]." They have implemented rigorous measures to battle pollution especially in big cities, by limiting the number of cars on the road and even removing coal boilers from buildings, leaving many homeowners, schools and businesses without heating. The government is also moving coal plants away from cities and even shutting some down. As a replacement, China is investing heavily in nuclear power.

- **United States**

The United States have had their National Environmental Policy Act, a national law that promotes protection of the environment, since 1970. This act was made because of increased public appreciation and concern for the environment during the industrialization and suburban growth across the United States in the 60's. However in recent years, especially since Trump became president, the United States have become increasingly less involved in environmental problems and are even trying to reverse previous climate policies. Trump is rebranding carbon dioxide as 'molecules of freedom[6]', and heavily prioritizing the coal industry by means of subsidizing and even increasing taxes on solar power installations and advocating against wind energy.

Being one of the world's largest industrial powers and thus one of the worst polluting countries, these actions could have severe effects on the environment, seeing as many people and nations worldwide view the United States as a leader and an example.

- **European Union**

The European Union (EU) is a major party in most global issues because it is a group of developed countries that many other nations expect to set an example for the rest of the world.

This is also the case with the climate crisis. As a union the EU has set ambitious goals to reduce emissions. However, the individual countries that make up the EU are not all equally active on taking measures to achieve these goals. Seeing as there is no form of 'punishment' or other immediate negative consequences for countries that do not reach the EU-set targets, there is a lack of motivation for some people and governments to take the necessary steps to enforce rules and regulations set by the

4 https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf
5 www.nytimes.com
6 www.forbes.com

EU. Still, the actions the EU has so far taken are a big step in the right direction and set a great example for other nations as well. More information on what the EU is doing regarding climate change can be found here: https://www.consilium.europa.eu/en/policies/climate-change/.

Timeline of Key Events

1760 The industrial revolution starts, bringing rising use of fossil fuels.

1896 Swedish chemist Svante Arrhenius becomes the first to quantify carbon dioxide's role in keeping the planet warm.

1950's U.S. scientist Charles Keeling sets up stations to measure carbon dioxide concentrations in the atmosphere at the South Pole and at Mauna Loa, Hawaii. The measurements have shown a steady rise.

1960's Companies in the fossil fuel industry become aware of the dangers of rising greenhouse gas emissions. (e.g. the #Exxonknew scandal)[7]

1988 The United Nations sets up the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific evidence.

1997 The Kyoto Protocol is agreed in Japan; developed nations agree to cut their greenhouse gas emissions on average by at least 5 percent below 1990 levels by December 2008. (The United States stay out of the deal)

2001 China's emissions start rising quicker than ever before. This keeps going until 2014.

Previous attempts to resolve the issue

- **UNFCCC[8]**

  The United Nations Framework Convention on Climate Change (UNFCCC) objective is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". The framework sets non-binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. Instead, the framework outlines how specific international treaties (called

7 www.grist.org
8 United Nations Framework Convention on Climate Change

"protocols" or "Agreements") may be negotiated to specify further action towards the objective of the UNFCCC. This convention has led to measures such as the Kyoto protocol, the Copenhagen Accord and the Paris agreement. One of the main criticisms of the UNFCCC process is that it has failed to achieve its goals of reducing carbon dioxide emissions.

- **Climate emergency declarations**
  In declaring a climate emergency, a government admits that global warming exists and that the measures taken up to this point are not enough to limit the changes brought by it. The decision stresses the need for the government and administration to devise measures that try and stop human-caused global warming.

Possible Solutions

- Moving jobs from the renewable energy sector to rural areas where people are currently working in the fossil fuel industry. Politically, a large percentage of votes in rural areas are relatively conservative because they are afraid they will lose their mining/drilling jobs to the renewable economy. Making sure these people won't lose their jobs during the transition but instead bring more job opportunities to them could incentivise politicians will to more actively speed up the transition.

- Decrease subsidies on fossil fuels. Many governments still heavily subsidize the fossil fuel industry because a lot society is still largely dependent on the enormous amounts of energy they produce for cheap prices. Slowly decreasing these subsidies will make fossil fuels more expensive making renewable energy more appealing.

- Subsidize renewable energy more. This could go along with a decrease in fossil fuel subsidies. It would make renewable energy cheaper than fossil fuel energy which would have huge negative effects on the fossil fuel industry.

- Taxing all emissions such as methane, nitrogen oxides and sulphur oxides. This would make the emission taxing more complete and make it easier to solve problems such as the over-consumption of meat.

- Invest in developing more eco-friendly batteries. Seeing as a lot of batteries are still hard to recycle but are increasing in demand because of humanities gradual shift to electric energy, finding a way to make batteries eco-friendlier will spare us big problems in the future.

Appendices

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