

Forum:	Environmental Commission
Issue:	Limiting the consumption of non-renewable resources to avoid exceeding the world's carrying capacity
Student Officer:	Dafni Paraschi
Position:	President

PERSONAL INTRODUCTION

Dear Delegates,

My name is Dafni Paraschi and I am currently an IB1 student attending Costeas-Geitonas School. In this 7th session of PS-MUN, I will be serving as the Chair of the Environmental Commission (EC), a position I am honored to be holding.

MUN has been –and is- my passion for the past 3 years, motivating me to participate in 11 conferences thus far and 6 chairing experiences. That being said, as the Chair of the Committee I wish to bring out the best in each and every one of you. MUN is about living the experience to its fullest and I believe that me and my co-chairs' role in doing this is vital. Throughout the duration of the conference, we will be there to establish the procedures, enhance the quality of work and maintain a flow of debate.

Most of all, however, we will be there throughout and before to help you. Do not hesitate to contact me for any possible question you might have in this regard, in my personal e-mail; daparaschi@gmail.com . I am looking forward to hearing from you and seeing the best possible outcome during the conference.

The topic of resource control is of the utmost importance. Although we tend to prioritize political and economic issues, it is important to realize that the earth that we exploit will not be fruitful indefinitely and it is in our hands to change the sustainability of future generations and our planet.

Kindest regards,

Dafni Paraschi

Chair of the Environmental Commission

INTRODUCING TOPIC

From Hadean and Archean, to Mesozoic and Cenozoic, the geological time scale has been divided into epochs in relation to major trends and the effect of species of the time and although, our epoch is currently the Holocene, scientists are purporting that we are entering a new epoch, the Anthropocene. This goes on to show the impact humans have had, and are still having, in the natural environment, through a variety of ways.

One of the most important ones is the use of non-renewable resources. Non renewable resources are resources which are not able to be restored to their previous quantity in the short-term, once they have been used. Examples of non-renewable resources are fossil fuels. Moreover, non-renewable resources are not only harmful to the environment in their extraction but due to their nature of one-use-only, they also bring the earth closer to its fullest capacity. This refers to the earth's carrying capacity.

Carrying capacity is the uppermost number of a certain species, in our case humans, that the earth is able to sustain. The world's carrying capacity is inter-connected with a number of factors which are not to say, "Stand-alone" but also inter-connect in their effect on carrying capacity. We are aware of the fact that carrying capacity is in fact proportionate to the level of use of all types of resources, especially non-renewable ones. Although the world's carrying capacity is connected with a wide number of factors, it is currently purported that if all the people in the world were consuming as many non-renewable resources as the average middle-aged American, the world would have already reached its carrying capacity, we would be running short on resources and thus, have difficulty in our survival. Limiting our use of non-renewable resources is in our day, through using alternative methods of energy, our best chance at not exceeding the world's carrying capacity.

KEY TERMS

Non-renewable resources

Non-renewable resources are all natural resources found on Earth whose supply is not unlimited and whose quantity is irrecoverable once it has been consumed. Non-renewable resources could also be defined as the natural resources that cannot be resupplied naturally at an identical scale and pace to that which they are consumed. Examples of non-renewable resources are nuclear fuels, coal and gas.

Renewable resources

Conversely, renewable resources, also known as renewable energy, are all natural resources that have the ability of restoring themselves in a natural manner over time. Examples of renewable resources are solar power and hydropower.

Carrying capacity

The best number of organisms of a species that can be sustained indefinitely by a particular environment. Carrying capacity is applicable to all species, including humans.

Sustainable Development

According to the UN's World Commission on Environment and Development report "Our Common Future", sustainable development refers to development that fulfills the need of the current generation without depriving future generations of the capacity to satisfy their needs.

HISTORICAL INFORMATION

Non-renewable resources

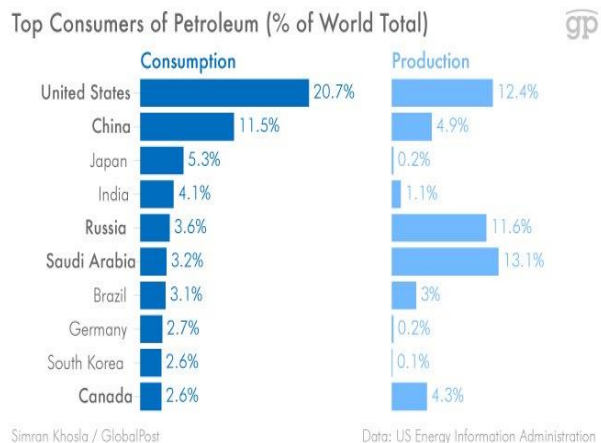
Non-renewable resources are finite in their nature considering the fact that they originate from the Earth and their recovery takes millions of years. Furthermore, renewable resources are limited in their supply. If we were to categorize non-renewable resources we would have to divide them into two categories: fossil and nuclear fuels.

Primarily, fossil fuels originate from organic material which has been buried between layers of debris for a large amount of time (millions of years) inside the Earth. This organic matter usually derives from plants which are decomposed over time leaving behind remains, the fossil fuel deposits. We call these matters fossil fuel deposits because they are highly volatile¹ which in turn, makes them effective sources for the production of energy. Their extraction is a difficult and complex process occurring usually through mining and drilling. Examples of fossil fuels are crude oil, gas and coal. Although coal and gas are most usually exploited for heating and giving energy through power plants, petroleum is highly conversant. More specifically, petroleum is also useful in the production of plastics, jet fuel, heating oil, propane and petrol. At this point it is important to note that the countries known for most using fossil fuels are Russia, the United States of America and China along with Iraq, Saudi Arabia and Qatar but not to such a great extent.

¹ Volatile matters are matters which are able to explode.

The second category of non-renewable resources are nuclear fuels. The main element naturally used in the production of nuclear fuel is uranium ore. This element is obtainable in the Earth’s core. In small quantities, uranium is accumulated by miners who collect, filter and purify the uranium. This is done through compiling the uranium and forming it into rods. These rods are then dipped into tanks full of water which helps the element disassemble and eventually, release energy which heats up the water and thus pressure is created, which gives energy to turbines that generate electricity.

In general, the overwhelming majority of energy generated in our planet comes from non-renewable energy. That is because although the extraction of non-renewable resources is complex, it is relatively inexpensive. Moreover, it is the case with most non-renewable resources that very little quantity of the resource can produce great amounts of energy, thus giving it two major advantages which mark it as a largely effective energy source. That being said, non-renewable resources have major drawbacks. Primarily, the consumption of many fossil fuels, such as petrol, emits carbon dioxide. Carbon dioxide is a greenhouse gas, meaning that it creates a gas “layer” in the earth’s atmosphere, not allowing the residual heat received from the sun to escape the atmosphere. As a result, the heat returns to the environment and the widely known phenomenon of “global warming” occurs. Further analysis is not of relevance in this study guide. To conclude, what one needs to remember is the finite nature of these resources. It is calculated by scientists that we have approximately 50 years until we run out of crude oil and 70 until we run out of natural gas.



Graph depicting the countries which consume the most petroleum.

Source: <http://www.pri.org/stories/2014-06-02/these-maps-show-which-countries-use-and->

World Carrying Capacity

As has been defined in the key terms section, carrying capacity refers to the number of organisms of a species that an environment can sustain indefinitely.

This means that the Earth cannot possibly sustain an infinite amount of humans, because the earth’s resources for covering the needs of these beings are finite and thus, not enough. The carrying capacity is greatly dependent upon the reproduction of humans, the amount of resources that they consume and in general, and their synergy with the environment as a whole. It is exactly because of this that the

world's carrying capacity for humans is not entirely clear. Figures range from 2 to 40 billion.

To be more specific, humans do not behave uniformly in their interaction with the environment, meaning that people from different origins and backgrounds do not consume the same amounts of resources. As it has been mentioned before, if everyone were to consume the amount of resources a middle-aged American consumes, the Earth's carrying capacity would only be limited to 2 billion people. However, if everyone consumed up to the amount of satisfying their needs, a carrying capacity of 40 billion people would not seem impossible.

This consumption is largely connected with non-renewable resources. As we have mentioned, non-renewable resources are originated from the Earth, thus, they are part of the Earth's "storage". If we continue to consume the sheer amount of non-renewable resources we currently consume, eventually, they will run out. As a result, the Earth will not be able to sustain part of our needs. Entire economies, such as Saudi Arabia's economy that is dependent upon oil extraction, will collapse, leaving millions of people on the verge of poverty. However, because it is highly unlikely that we will completely run out of non-renewable resources, it is most likely that their extraction will start becoming scarcer. As a result, once again economies will shrink due to high prices of extraction, import and export of the non-renewable resources. The rich will be poorer and the poor will further dive into poverty.

COUNTRIES INVOLVED IN THE ISSUE

United States of America (USA)

USA is the leading country with regard to non-renewable energy consumption. As can be seen in the graph above, they consume about 21% of the World's petroleum. Although their oil consumption is relatively high, they are also highly dependent upon coal, as about 50% of the country's energy is sourced from coal. That being said, the USA is not only consuming a great amount of non-renewable resources, they are also producing it. There are reserves for all forms of renewable energy all over the USA, from Los Angeles to the Appalachian Mountains. Considering the fact that USA is dependent upon all forms of non-renewable energy, both economically and practically, its lack of effort towards the shift of renewable resources is explained. Another factor not allowing the USA to shift to renewable energy is its instability with regard to changes in government control. Different administrations impose different policies with regard to efforts of shift towards non-renewable resources. For example, former President George W. Bush had announced that the State will fund a new, alternative "hydrogen powered fuel cell car"². 5 years later,

²https://www.cov.com/~media/files/corporate/publications/2013/02/why_the_united_states_does_not_have_a_renewable_energy_policy.pdf

with the Obama administration, the funds were diminished by 80%. As a result, there exists uncertainty in the market with regard to whether renewable resources are supported or not and thus, investment in them drops dramatically.

China

Due to its immense population and highly lucrative land, China is also a leading country in both the consumption and production of non-renewable resources. Moreover, its use of coal is astonishing; it consumes about 50% of the world's resources. For years, as reported by Bloomberg, China's corporations have been prioritizing its economic growth far more than the quality, or even survival, of its environment and as a result, have completely ignored any pollution-regulating laws, which limited the use of non-renewable resources. According to a study published by the Institute of Public and Environmental Affairs (IPE)³, 1,092 out of 2,679 corporations involved in the survey were subjects of violations of environmental laws in 2014. However, it seems as if China has started to shift towards using more renewable resources. As a matter of fact, the government has claimed that they are committed to using less non-renewable resources, proving their claim by installing more renewable energy installments such as solar panels, windmills and hydropower dams, than any other country. Thus, currently, China seems like a model to be followed by other countries. Much controversy has been created, however, since according to media like Forbes⁴, new coal power plants are currently being built in China. What is actually happening is that China is currently investing on "ultra-supercritical coal" power plants which do not nearly consume the same amount of coal to generate energy.

³ A non-governmental organization (NGO) based in Beijing (www.ipe.org.cn/)

⁴ <http://www.forbes.com/sites/wadeshepard/2016/07/08/if-china-is-so-committed-to-renewable-energy-why-are-so-many-new-coal-plants-being-built/#19d5637165f7>

TIMELINE OF EVENTS

DATE	EVENT
1948	The International Union for Conservation of Nature is recognized, creating a Union amongst governments and organizations and playing an important role in the fight against non-renewable resources through providing adequate tools that enhance sustainable development.
June 5, 1972	The United Nations Environment Program is formatted with a mission of benefiting people’s standard of life through the environment, without diminishing the opportunities of development for future generations.
2007	The International Resource Panel, a panel of scientists, is put into effect which focuses on enhancing sustainability via diminishing the use of non-renewable resources.
September, 2015	The Global Goals for Sustainable Development which wish to establish an end to extreme poverty, injustice and inequalities are set, including goals with regard to non-renewable resources such as “Affordable and Clean Energy” and “Responsible Consumption and Production”.
March, 2016	China embarks on campaign towards a shift to renewable energy through installing renewable energy power plants.
November 4, 2016	The Paris Agreement is entered into force, an agreement essential into the fight against climate change which promotes the limitation of non-renewable resources.
November 19, 2016	Italy enters a new program into force which empowers co-operation between scientists, policy- makers and business leaders toward achieving sustainability.

POSSIBLE SOLUTIONS

Due to the nature of the issue, its resolving requires a multifaceted approach. Limiting the use of non-renewable resources can be achieved through a variety of measures which need to be reviewed by each country so that they know which one best suits its needs.

Primarily, countries will need to adopt new policies so as to shift into using more renewable resources rather than non-renewable ones. This can be done through building power plants which generate energy through renewable resources, such as wind mills. In cases of countries where such installments cannot be afforded, the UN should create an international fund for this sole purpose where NGOs, member states and corporations can offer economic aid.

It is at this point important to realize that the effort of limiting consumption of non-renewable resources must not only be done on a state level but on an individual level as well. NGOs can promote individual houses to alter their way of achieving energy and heating by means of installing solar panels. That being said, recycling should also be promoted. In this way, material such as plastic, which is produced with oil, can be reused without further exploiting the specific non-renewable resource.

Countries' economic dependence upon the production and selling of non-renewable must be discouraged by the UN. An agreement between the states on limiting their percentage of their economic activity which sources to trading of non-renewable resources by a given year could be put into place.

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