



# HoMMUNC

World Bank

Chair: Laszlo Herwitz  
Moderator: Veer Sobti

Dear Delegates,

My name is Laszlo Herwitz and I am excited and thrilled to serve as your World Bank chair for this session of HOMMUNC. This will be my 4<sup>th</sup> HOMMUNC conference, my first as a chair. I have been a part of Horace Mann's Model UN team for the past 4 years and, naturally, am very interested in the study and pursuit of international relations and global affairs. I, along with my moderator Veer, look forward to hearing all of you debate the vitally important topics of renewable energy and sanitation. I also hope that you will be able to demonstrate your leadership skills and your ability to compromise in the process. The issues that you will be discussing in committee are essential to strength and sustainability of developing nations and I know that all of you will treat them as such by demonstrating your full talent and interest in attempting to solve them. I hope that the problems posed by these two topics will both challenge and enthrall you. In preparing for this committee, I expect that, in addition to reading the background guide, you will do further research about these topics and your country's position on them. I will give a quick overview of the structure of committee at the beginning but I would urge those of you who are newer to MUN to read up on parliamentary procedure prior to committee in order to help the proceedings run more smoothly. I encourage you all to be prepared for a lively and vigorous debate but also remind you the importance of respecting the other delegates, both on a diplomatic and personal level. If you have any questions not answered in the background guide please do not hesitate to email me or your moderator. I wish you all the best of luck in your research and preparation.

Sincerely,

Laszlo Herwitz  
Chair, World Bank

## **About the World Bank**

Founded in July 1944, the World Bank is located in Washington D.C., United States. Created as an institution of the United Nations, the World Bank is an international financial organization that provides loans to developing countries for capital programs. The World Bank is also a subset of the World Bank Group, and a member of the United Nations Development Group. It is comprised of 188 countries worldwide, with an overall goal of reducing poverty, one of its two main objectives; promoting shared prosperity being the other.

Ever since its founding at the Bretton Woods Conference in New Hampshire, along with three other institutions, including the International Monetary Fund (IMF), the World Bank has been a vital source of financial and technical assistance to developing countries around the world. Providing low-interest loans, interest-free credits, and grants to developing countries the World Bank forms a unique partnership to reduce poverty and support development.

In this committee, delegates will be confronted with two of the most pressing issues of the World Bank: sanitation and renewable energy sources. You will be tasked with writing resolutions outlining your approach to these prevalent issues and how to solve them using the considerable resources at the World Bank's disposal. Delegates should keep in mind that the World Bank has only one portfolio power: the ability to hand out loans. Under no circumstances should any resolution incorporate an action that could not be carried out by the authority of the World Bank. The committee should be more concerned on the topic of the circumstances the organization would be willing to hand out a loan.

## **Topic 1: Renewable Energy Sources**

Renewable energy is defined as energy that comes from sources which are continually replenished by nature. With the rapid depletion of natural resources, including fuels such as coal, oil, and natural gas, scientists are desperately trying to find alternate energy sources that can be substituted in and used in daily life to decelerate the consumption of these resources. Considering the urgency of finding alternate energy sources, scientists have focused their research into harnessing the power of renewable energy sources for two major reasons: they are infinite and don't create toxic waste that could be harmful or destructive to the surrounding environment. Unfortunately, only about 11% of the global energy consumption is from renewable energy sources, a statistic that scientists are working hard to improve.

The perks of renewable energy sources are that they exist over wide geographical areas and they pose numerous economic benefits to the people they provide for. Unlike renewable energy sources, current energy sources aren't as widespread and often limited to a certain number of countries, favoring countries with access to a sizeable amount of natural resources. However, the amount of countries with limited natural resources is enormous, making renewable energy their best option. On the plus side, renewable energy is found everywhere in the world in the form of water, wind, the sun, geothermal sources, and biomass sources, making them the ideal area of research for scientists since they can be applied in pretty much every country.

In addition the economic benefits of using renewable energy sources are that no trade is needed to obtain natural resources and taxes can be lowered on citizens as a result of less money having to be spent on natural resources to fuel a country. The question for most countries then becomes which renewable energy sources are the best for them to invest in? As stated above, renewable energy sources are universally accessible, but a country's geography ultimately determines what renewable energy is available. Even more so, a closer look into the different renewable energy sources is crucial for determining which ones are the most beneficial.

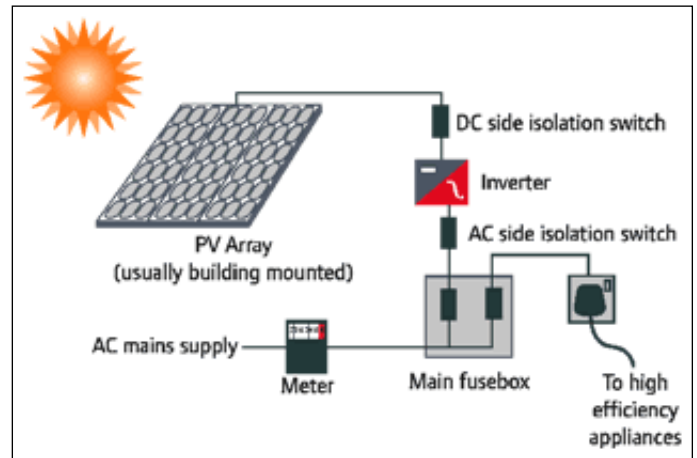
As members of the World Bank, you will be responsible for handing out loans to governments or private contractors looking to start up renewable energy projects.

#### *Solar Power:*

Solar power uses a process known as photovoltaics (PV) to convert sunlight into electricity. The electricity garnered from these solar technologies can be used to provide heat, light, hot water, and cooling to its users. Despite the ample supply of sunlight in the world, making solar energy one of the easiest energy sources to access, solar power accounts for less than 1% of the world's total energy consumption. However, this percentage is expected to increase with the development of more sophisticated solar technology.

Most solar systems rely on solar panels to collect the sun's energy and convert it to electricity. Solar cells dispersed across the surface of these solar panels

are lined with semiconductors made from silicon and other conductive materials. When a photon (light particle from the sun) strikes the surface of a solar cell, the energy from the photon is transferred to the electrons in the semiconductors, allowing



them to bump up a valence level. These high-energy electrons then flow out of the solar panel, creating an electric current known as direct current (DC). They arrive at an inverter that converts the direct current into alternating current (AC), which is the kind of electricity used to power all appliances that are plugged into a wall outlet.

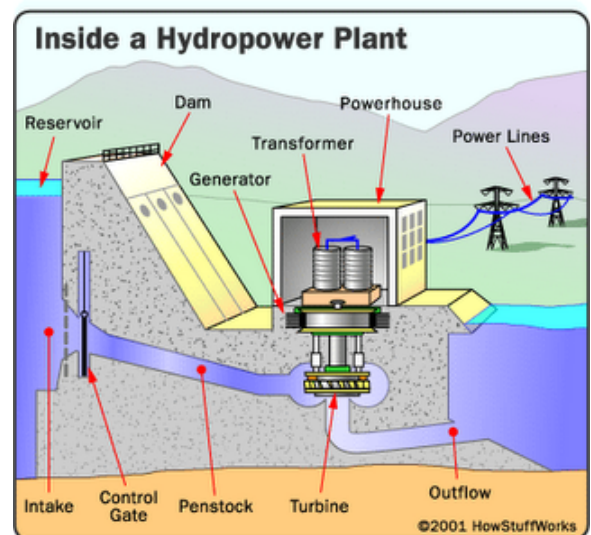
The location of the solar panels has no correlation to the process used for energy accumulation. Whether the solar panels are located on top of a house, or in the middle of a dessert, the process for powering a house or an entire city is the same, just as long as there is access to direct sunlight. However, there are a few major drawbacks to using solar power. There are a few environmental concerns associated with the collectors and storage devices of the solar power. Additionally, solar technology is very expensive. A lot of money is required to mass-produce the solar cells and other equipment needed to convert sunlight into energy. Today, solar energy is more than twice the cost of energy obtained from fossil fuels. Lastly, solar power is only available during the day when there is access to direct sunlight, adding on to why solar power is more expensive.

### *Hydropower:*

Hydropower uses the flow of any water source to generate mechanical energy that can be converted into electricity. Using water to generate power and make tasks less arduous is an ancient process. It dates back to some of the earliest civilizations on the planet where it was used for agricultural purposes, but its current applications are much more significant. The energy garnered from hydroelectric plants can be used to power buildings and appliances and can be used in factories to power machines. Hydropower is the most common renewable energy source, but it constitutes less than 5% of the global energy consumption. It is produced in 150 countries around the world, with China being the largest producer of hydroelectricity.

Most hydroelectric power plants are situated near a dam or waterfall where the pace of the water is very rapid. Generators,

which are used to collect this power, are placed near these water sources and are attached to turbines that are placed inside the water. The flow of the water causes these turbine blades to spin, generating mechanical energy that is converted to electricity by the generator. The generator sends the electricity



to a transformer, which relays the energy to the electricity grid. This process makes hydropower one of the most efficient energy sources. It's cheap, costing between 3

to 5 cents per kilowatt-hour, the technology is reliable, they are easy to maintain, and the power source is constantly replenished by rain.

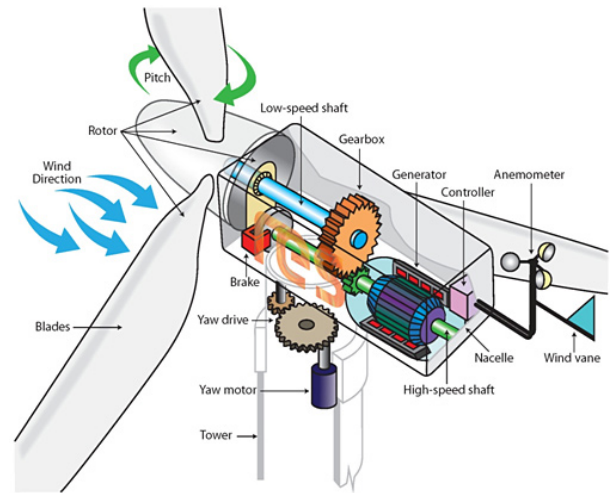
Despite the great efficiency of hydropower, there are many drawbacks that hinder its advancement. Even though hydropower is very cheap, building a hydroelectric power plant is extremely expensive, generally costing above 2 billion dollars. Additionally, they are entirely dependent on precipitation to keep the water amount high. If a drought were to occur, the power plant would be rendered useless and therefore a waste of money. Lastly there are a few environmental drawbacks to hydroelectric power plants: they can interfere with fish and other animal populations, and they can alter the water quality; however, they rarely occur due to proper maintenance and a well-planned location.

#### *Wind power:*

Wind power uses the wind to generate mechanical energy that can be converted into electricity. It too is an ancient process that dates back long ago when windmills were used to pump water or grind grain. Nowadays, it's used to power whole communities. With an ample wind supply and great potential due to few environmental risks, wind power is the fastest growing source of renewable energy around the world. It provides less than 1% of the global energy consumption, but wind power is expected to grow at a rate of 30% annually.



Wind turbines are generally placed in areas of high wind productions with a good amount of wind speed. They are usually mounted high above the ground to be able to capture the faster and less turbulent winds. Wind turbines generate electricity by capturing the wind with its blades forcing them to rotate. The rotations cause a shaft inside the turbine, connected to a generator, to spin, therefore sparking the generator to create electricity. This electricity flows down the turbine, into the ground, and relays to the power grid.



There are very few drawbacks to using wind power, those of which are very miniscule. Wind turbines have been shown to cause wildlife death as a result of flying animals colliding with them. However, finding appropriate locations for building these turbines can minimize the impact on wildlife. Lastly, the biggest restriction there is on wind power is that wind turbines are completely dependent on the amount of wind there is in a certain area, which means they can only be built in areas where there is constantly a lot of wind.

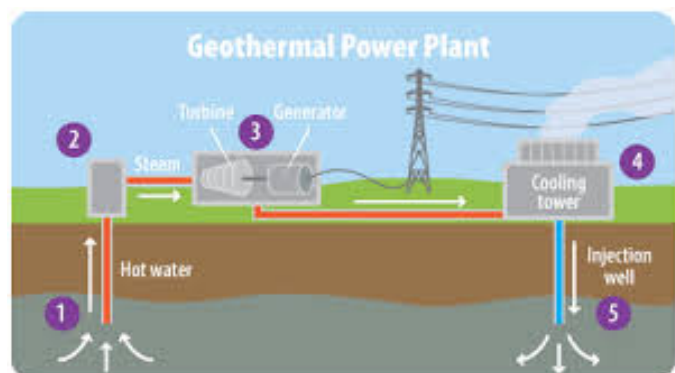
### *Geothermal Power:*

Geothermal power uses naturally produced heat inside the Earth to create electricity or heat. The applications of geothermal energy go beyond that of any other renewable energy source in that it can provide electricity for buildings as well as direct heat straight from the source. Most geothermal power plants use steam or

hot water from underground and generally produce very few emissions. Geothermal sources are continuously available and are currently used in three different ways: direct-use systems, use of deep reservoirs to generate electricity, and geothermal heat pumps. Geothermal energy accounts for less than 1% of the global energy consumption.

Direct-use geothermal systems use a geothermal reservoir by drilling a well into them to provide a steady stream of hot water. The water is brought up through the well by piping and other mechanical systems ready to deliver heat straight to its destination. A disposal system then releases the cooled water back underground or stores it in a surface pond. This heat is used for heating buildings along with several other applications. Geothermal reservoirs with the potential of being used in direct-use systems are available to access in a numerous amount of places, depending on the geography of the country.

Geothermal power plants convert hot water and steam into electricity. The methods used to achieve this are similar to those of hydropower and wind power. Steam accessed through deep wells is used to turn turbine blades attached to a generator. This sparks the generator to create electricity, which is then sent to the power grid. Another type of geothermal power plant, called flash steam plants, use extremely hot water that gets pumped to the surface and vaporized. This water vapor is used to rotate turbine blades creating the same energy. The



vapor is then cooled and sent back underground.

The final way geothermal sources are utilized is by heat pumps used for space heating and cooling. Since the Earth remains at a relatively constant temperature throughout the year, it is warmer than the air above it during the winter and cooler in the summer. A geothermal heat pump is able to utilize this science by transferring heat from the ground into buildings during the winter, and transferring it back out and into the ground during the summer.

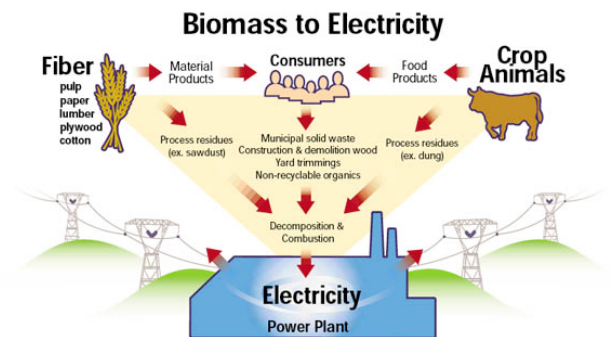
Geothermal energy is reliable, efficient, and environmentally friendly, as they produce few harmful emissions. However, geothermal energy plants are restricted to areas where there is a reasonable access to hot water and steam, which can be inconvenient if there is no energy demand near places with a strong access to geothermal sources.

#### *Biomass Power:*

Biomass power uses energy in plants and plant-derived material for fuels, called bio fuels, for heat and even for electricity, known as biopower. Biomass power is important for two significant reasons: it is the second largest source of renewable energy in the world, accounting for about 10% of the global energy use, and it is a crucial part of waste management. Energy crops, such as trees and grasses, along with high-efficiency conversion technologies can help to decelerate the consumption of our precious fossil fuels.

Wood is and has always been the largest biomass energy source. Most of the energy obtained from wood is from pulping liquor, a waste product from processes of pulp and paper.

Biomass is also capable of producing electricity because when burned, the steam given off can be used to rotate turbine blades hooked up to a generator that collects the energy. Using the same process, burning methane can also produce electricity. The pulp and paper industries are the largest producers of biopower on a global scale



Biofuels are another form of biomass power that is extremely important to researchers. The two major types of biofuels are ethanol and biodiesel. Ethanol is produced by the fermentation of any biomass high in carbohydrates, generally corn, through a process similar to brewing beer. This ethanol can then be used as fuel for vehicles. Biodiesel is produced by processing vegetable oil, animal fat, or recycled cooking grease with alcohol or other chemicals. It is mainly used as an additive to reduce vehicle emissions or as a renewable alternative fuel.

Biomass power is great because it is produced from plant sources, meaning It can be produced almost anywhere in the world. It is also reliable and an efficient source of energy. However, biomass power can reduce biodiversity and can harm wildlife habitat. It could potentially produce toxic pollutants, which could be the result of misappropriation of the technology.

## **Questions to Consider:**

1. Which renewable sources has your country already invested in?
2. Looking forward, which renewable energy sources will your country be looking to invest in?
3. What is the best renewable energy source that most resources and money should be focused on?
4. Under what conditions should loans be handed out?
5. Should loans be given to private companies in addition to governments?
6. What other plans can be implemented to slow the consumption of natural resources?

## **Topic 2: Sanitation**

The United Nations estimates that roughly 2.5 billion people globally live without access to proper sanitation. About 1 billion of these people practice “open defecation”, which is the process of going in the bush near villages. Since 1990, about 1.9 billion people have gained access to toilets or latrines; however, sanitation still remains one of the most off-track Millennium Development Goals (MDG) globally. Asia and Africa are the continents with the worst sanitation; 70% of Sub-Saharan Africa and 56% of South Asia still lack access to something that is taken for granted in the majority of the world. If the current progress continues, the world

will miss the Millennium Development Goals for sanitation by over half a billion people.

Sanitation has an affect on many of the other development challenges prevalent in the world today. Poor sanitation impacts public health, education, and the environment. As a result of a lack of sanitation, young girls are more likely to drop out of school and are vulnerable to attacks when looking for privacy. It is also responsible for over 700,000 premature deaths per year. Pollution resulting from improper disposal and treatment of urine and feces also affects both water resources and ecosystems. However, these various wastes can provide valuable resources and economic opportunities, specifically in urban environments and water-scarce surroundings. Additionally, recent research has shown that ending open defecation can reduce the transmission of diseases, stunting, and under-nutrition, therefore saving the lives of many children.

Poor sanitation can also restrict a country's economic growth. Lack of sanitation costs billions to some countries, quantifying to the equivalent of 6.3% of GDP in Bangladesh, 6.4% of GDP in India, 7.2 % of GDP in Cambodia, 2.4% of GDP in Niger, and 3.9% of GDP in Pakistan annually. These economic losses are sparked by premature deaths, the cost of healthcare, lost time and productivity seeking treatment, and finding access to sanitation institutions.

As members of the World Bank, you will be responsible for handing out loans to governments or private contractors looking to start up sanitation improvement projects in developing countries.

### *India:*

The World Health Organization and UNICEF estimate that roughly 69% of Indians still lack access to improved sanitation facilities, with the majority of these people practicing open defecation.

As a result, children are exposed to a bacterial brew that often sickens them; leaving them unable to attain a healthy body weight no matter how much food they eat. The essential nutrients obtained from eating their food is mainly used for fighting off infection, leaving very little nutrition for brain and body development, resulting in death from malnutrition.

### *Nigeria:*

With a population of about 168 million people, roughly 103 million people (61%) in Nigeria live without access to proper sanitation, with open defecation as the default option for the underprivileged.

The lack of sanitation sparks many cholera and typhoid outbreaks and is responsible for over 194,000 annual premature deaths. In addition, Nigeria loses about 3 billion dollars yearly due to poor sanitation. Many improvement projects, along with water projects, are often left abandoned, opening up opportunities for fraud.

### *Brazil:*

About 39million people in Brazil live without access to proper sanitation, roughly 20% of the country's population. Without any proper toilets or plumbing,

the impoverished are forced into open defecation, leading to the spread of disease as a result of ubiquitous fecal matter. Brazil is also forced to spend a significant amount of their annual GDP on problems resulting from poor sanitation.

## **Bloc Positions:**

### *Africa*

Having the second largest population among the continents of the world, Africa has the highest percentage of people living without access to proper sanitation. Roughly 70% of Sub-Saharan Africa is lacking improved sanitation, with over 600 million people on the continent living without it. In 16 of the 54 African countries less than 25% of the population uses an improved sanitation facility.

Africa as a country is nowhere near on track to meet the MDG sanitation target; only 5 of the 54 are on track. Additionally, 7 countries represent Africa on the list of 16 countries with the worst access to sanitation, those being: Nigeria, Ethiopia, the Democratic Republic of the Congo, Tanzania, Sudan, Kenya, and Ghana. Open defecation is the leading cause of problems in Africa resulting from poor sanitation. Diseases are spread, cholera and typhoid outbreaks occur, and significant amounts of GDP are spent on sanitation due to the lack of a safe place to release harmful toxins from the body.



## *Asia*

Asia, having the biggest population among any continent in the world, is the country with the most people living without proper sanitation. In particular, in South Asia, the pace of sanitation improvement has remained steady as the rate of population growth is dramatically increasing. It is estimated that over 1.1 billion people live without access to proper sanitation in South Asia alone, the part of the world which contains the two countries with the largest populations: China and India. Despite the fact that these countries have great financial systems, there have been minimal efforts to improve upon the horrific sanitation conditions within their country.

8 of the top 16 countries in the world with the worst access to sanitation are in Asia, with the top three in the world being India, China, and Indonesia. Over a billion people face sanitation issues in India and China alone. With open defecation as the leading cause to malnourishment, premature deaths are wide scale. However, the number of people still practicing open defecation has steadily declined, showing promising signs in terms of a decrease in deaths.

## *Latin and South America*

About 125 million people living in Latin and South America do not have access to proper sanitation. This represents a 23% of the total population. This lack of access is a huge contributor to poor public health in poor areas. Open defecation is the main option for excretion in places where there are no toilets, plumbing, or sewage to dispose of the toxic waste.

Compared to other continents, the sanitation situation in Latin and South America is not so severe. Brazil is the only country representing South America on the top 16 countries with the worst sanitation.

## **Questions to Consider:**

1. What is the definition of proper sanitation?
2. What are some plans that could be implemented to solve sanitation issues around the world?
3. Under what conditions should loans be handed out?
4. Should loans be given to private companies in addition to governments?
5. Is it smart to let a developing country handle sanitation issues on its own or should help from an NGO be required?
6. What measures can be taken to stop the spread of disease in areas with poor sanitation?

## **Sources**

### **Renewable Energy:**

<http://www.worldbank.org/en/topic/energy>

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