

IEEE

NAGPUR SUBSECTION

IEEE TECH MUN

9-10, February 2019.

G.H. Rasoni College of Engineering.



UNEP
(Study Guide)

Introduction Letter

Dear Delegates,

It is my pleasure to welcome you as CHAIRPERSON to UNEP at IEEE TechMUN 2019. I hope that you will find the weekend to be informative both in the topics that you will discuss and in the diversity of people that you meet.

I hope to help you and encourage you to make the most of this MUN by preparing well.

For any queries feel free to contact me or my co-chairs anytime

Vikram Advani

Vikramadvani2112@gmail.com

Vedant Ballal

Ballalvedant01@gmail.com

Introduction to UNEP

The United Nations Environment Programme (UNEP) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment.

UNEP's 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."

TOPIC- Creating a framework to prevent and reduce air pollution to improve air quality

Current Situation:

- 6.5 million people die annually as a result of poor air quality including 4.3 million due to household air pollution
- Lower respiratory infections: 52 million years lost or lived with disability annually due to household or ambient air pollution, including second-hand tobacco smoke
- Chronic obstructive pulmonary diseases: 32 million years life lost or lived each year with disability because of household air pollution and workers' exposure
- Ground level ozone pollution is estimated to reduce staple crop yields up to 26 per cent by 2030

History Of The Problem

In 2016, PM_{2.5} exposure reduced average global life expectancy at birth by approximately one year.

Around seven million people die each year from exposure to polluted air, both indoor and outdoor. The three biggest killers attributable to air pollution are stroke (2.2 million deaths), heart disease (2.0 million) and lung disease and cancer (1.7 million deaths).

Ambient (outdoor) air pollution accounts for:

- 25 per cent of all deaths and disease from lung cancer
- 17 per cent of all deaths and disease from acute lower respiratory infection
- 16 per cent of all deaths from stroke
- 15 per cent of all deaths and disease from ischaemic heart disease
- 8 per cent of all deaths and disease from chronic obstructive pulmonary disease

Air pollution doesn't just kill, however. It also contributes to other illnesses, hampers development and causes mental health problems.

One study found that ambient PM_{2.5} contributed to 3.2 million cases of diabetes in 2016.

Research from the United Nations Children's Fund (UNICEF) shows that breathing in particulate air pollution can damage brain tissue and undermine cognitive development in young children – with lifelong implications. An estimated 17 million babies under one year old live in areas where air pollution is six times higher than safe limits.

Effects On Economy

If you are lucky enough to not suffer the negative health impacts of air pollution, it can still hit you in the pocket. Air pollution creates a burden on healthcare systems, which costs taxpayers money.

Air pollution from energy production in the U.S. [caused at least US\\$131 billion in damage to its economy, including increased healthcare costs,](#) in 2011.

One Oxford University study found that [air pollution from cars and vans cost society 6 billion pounds](#) per year.

The European Environment Agency found that [emissions from 14,000 industrial facilities in Europe](#) cost society and the economy up to 189 billion euros in 2012.

Without action, the costs will rise. A study by the Organisation for Economic Co-operation and Development showed that the [annual global welfare costs of premature deaths](#) from outdoor air pollution are projected to be US\$18-25 trillion in 2060. In addition, the costs of pain and suffering from illness are estimated at around US\$2.2 trillion by 2060.

Effects On Climate

Air pollution doesn't just impact human health and economic growth. Many of the pollutants also cause global warming. Take black carbon, which is produced by diesel engines, burning trash and dirty cook stoves. Black carbon is deadly, but it is also a short-lived climate pollutant. If we were to reduce the emissions of such pollutants, we could slow global warming by up to 0.5°C over the next few decades.

Methane, a large percentage of which comes from agriculture, is another culprit. Methane emissions contribute to ground-level ozone, which causes asthma and other respiratory illnesses. It is also a more potent global warming gas than carbon dioxide – its impact is 34 times greater over a 100-year period, according to the International Panel on Climate Change.

Previous Efforts

- [Convention on Long-Range Transboundary Air Pollution \(LRTAP\)](#), Geneva, 1979
- Environmental Protection: Aircraft Engine Emissions, Annex 16, vol. 2 to the [Chicago Convention on International Civil Aviation](#), Montreal 1981
- [Framework Convention on Climate Change \(UNFCCC\)](#), New York, 1992, including the [Kyoto Protocol](#), 1997, and the [Paris Agreement](#), 2015
- Georgia Basin-Puget Sound International Airshed Strategy, Vancouver, Statement of Intent, 2002^[7]
- [U.S.-Canada Air Quality Agreement](#) (bilateral U.S.-Canadian agreement on [acid rain](#)), 1986
- [Vienna Convention for the Protection of the Ozone Layer](#), Vienna, 1985, including the [Montreal Protocol on Substances that Deplete the Ozone Layer](#), Montreal 1987

Effects To Human Health

Air pollution is a problem across the globe, but it disproportionately affects people living in developing nations. For example, the 3.8 million people who die each year from indoor air pollution are overwhelmingly from countries where people living in poverty are forced to cook, or heat their homes, with dirty fuels in poorly ventilated indoor spaces.

According to the World Health Organization's air quality database, [97 per cent of cities in low- and middle-income countries with more than 100,000 inhabitants do not meet air quality guidelines](#). In high-income countries, the proportion is 40 per cent.

Delhi, India and Cairo, Egypt have the worst PM₁₀ pollution levels out of the world's megacities (over 14 million people), but Argentina, Brazil, China, Mexico and Turkey all have cities in the top-ten list of most-polluted places.

Example Of Air Pollution

Alaska's 2004 wildfire season was the worst on record, largely because of unusually warm and dry weather. Throughout central Alaska and Canada's Yukon Territory, more than 11 million acres burned, an area equivalent to the states of New Hampshire and Massachusetts combined. As forests and the underlying peat layer burn, they emit visible pollution in the form of smoke, soot, and ash. But the fires also generate other harmful pollution. Fires emit carbon monoxide and hydrocarbons, plus nitrogen oxides, all of which, along with sunlight, are needed to make ozone. Unlike ozone in the stratosphere, which protects us from ultraviolet radiation, high levels of ozone in the troposphere, closer to ground level, can injure or destroy living tissue. Although the ingredients for ozone can be found in urban pollution, pollutants from fires might cause a significant increase in ozone levels, even far downwind from the fires. From June to August, the fires produced approximately 30 teragrams of carbon monoxide (1 teragram is about 2.2 billion pounds), roughly equal to all the human-generated carbon monoxide for the entire continental United States during the same period. The NASA study estimated that the boost in carbon monoxide and other fire-emitted pollutants increased ground-level ozone by up to 25 per cent in the northern continental United States, and by up to 10 percent in Europe.

Previously Adopted Resolution

The third session of the UN Environment Assembly (UNEA-3) adopted 11 resolutions submitted by Member States.

The 'Draft resolution on preventing and reducing air pollution to improve air quality globally' calls for member states to take action across sectors to reduce all form of air pollution. Among its recommendations, the resolution urges member states to:

- Consider joining or cooperating with, as appropriate, relevant global initiatives such as the Climate and Clean Air Coalition and the Global Methane Initiative
- Facilitate action to reduce air pollution in urban and rural areas including by encouraging cities and local governments to consider participating in, as appropriate, the BreatheLife campaign

Major Causes

The main sources of outdoor air pollution are fossil fuel emissions from coal burning for power and heat, transport, industrial furnaces, brick kilns, agriculture, domestic solid fuel heating, and the unregulated burning of waste materials such as plastics and batteries in open pits and incinerators. Other important sources include wildfires and the burning of peatlands, both of which generate haze, sand and dust storms, as well as desertification, which often results from land degradation, including deforestation and wetland. Particulate matter (PM_{2.5} and PM₁₀) affects more people than any other air pollutant. Levels of PM_{2.5} have remained largely constant despite efforts to tackle the problem, but PM₁₀ has been decreasing in some cities. Climate change is also modifying weather patterns, affecting the levels and occurrence of pollutants and airborne allergens, such as ozone and pollen, and in some cases exposing people to higher concentrations over longer periods than in previous decades.

Related Documents and Conventions

UNECE Convention on Long-range Transboundary Air Pollution, When scientists in the 1960s investigated the causes of the “acid rain” that was destroying forests, causing fish loss in lakes and putting entire ecosystems at risks in the Northern Hemisphere, they found that air pollutants, a significant part of which were emitted thousands of kilometres away, were the culprit.

In order to solve this problem, 32 countries in the pan-European region decided to cooperate to reduce air pollution. In 1979, they signed the UNECE Convention on Long-range Transboundary Air Pollution, creating the first international treaty to deal with air pollution on a broad regional basis. The Convention entered into force in 1983, laying down the general principles of international cooperation for air pollution abatement and setting up an institutional framework which has since brought together research and policy. Over the years, the number of substances covered by the Convention and its protocols has been gradually extended, notably to ground-level ozone, persistent organic pollutants, heavy metals and particulate matter.

The Convention has substantially contributed to the development of international environmental law and has created the essential framework for controlling and reducing the damage to human health and the environment caused by transboundary air pollution. It is a successful example of what can be achieved through intergovernmental cooperation.

A Resolution Must Answer

- What causes Air Pollution? How Should it be avoided, and will it work?
- What principles can guide an international agreement on the limitation of uses of pollutants across the globe?
- How should member states respond in order to abate and decrease air pollution
- Why and in how much quantity should other committees such as United Nation Human Rights Committee (UNHRC) must be involved to examine the health aspects?