

# Air Pollution

Air pollution is the contamination of air caused by the presence of compounds in the atmosphere that are hazardous to human and other living things as well as to the environment and materials. These compounds are commonly called as air pollutants. Gases (such as ammonia, carbon monoxide, sulphur dioxide, nitrous oxides, methane, carbon dioxide, and chlorofluorocarbons), particles (both organic and inorganic), and living molecules are all examples of air pollutants. Air pollution may cause illnesses, allergies, and even death; it can also hurt other living species like animals and food crops, as well as impair the natural environment for example, climate change, ozone depletion, and habitat destruction. Acid rain which is a consequence of air pollution, effects the constructed material such as buildings, bridges etc. This article discusses the causes, effects and measures to reduce air pollution.

Air pollution is caused by solid and liquid particles and certain gases that are suspended in the air. Breathing fresh, pure air has become nearly difficult due to the increased quantity of air contaminants. The major causes of air pollution are:

- **The Burning of Fossil Fuels:** The burning of fossil fuels such as coal, oil, and gasoline to generate energy for power or transportation is responsible for the majority of air pollution. It emits harmful gases such as carbon monoxide etc.
- **Industrial Emission:** Industrial activities emit a variety of pollutants into the atmosphere, which have far-reaching consequences for air quality. Particulate matter such as oxides of nitrogen, carbon and sulphur are major pollutants emitted by industries that use coal and wood as their primary energy source for manufacturing goods.
- **Indoor Air Pollution:** Toxic products, also known as Volatile Organic Compounds (VOCs), inadequate ventilation, uneven temperature, and humidity levels can all contribute to indoor air pollution, whether you are at work, school, or at home. House air pollution can occur as a result of careless factors such as smoking in a room or leaving a mold-infested wall untreated. The use of a wood stove or space heater can quickly raise the humidity level, which can have a negative impact on a person's health.

# Air Pollution

- **Transportation:** There is no denying that vehicle pollution is a major source of air pollution, particularly in cities. When a car burns gasoline, it emits pollutants into the atmosphere that are as harmful as smoking ten cigarettes per day. Carbon monoxide, hydrocarbons, nitrogen oxide, and particulate matter are all emitted by your vehicle. When there is a high level of vehicle pollution in the atmosphere, it causes a hole in the ozone layer, which contributes to smog and causes a variety of health problems.
- **Open Burning of Garbage Waste:** Open garbage burning is far more hazardous to your health and the environment than you may believe. According to Engage EPW, Delhi air pollution is suffocating public health. Delhi generates 9500 tonnes of waste per day, making it India's second waste dumping city. Exposure to open burning of garbage waste can cause serious health problems such as cancer, liver problems, immune system impairment, and reproductive dysfunction; it can also harm the developing nervous system.

Apart from these, agricultural activities, wildfires and use of chemical and synthetic products are other factors of air pollution.

Air pollution has severe impacts on both humans as well as on the environment. The effects are both short term and long term.

- Short term effects include infections such as pneumonia and bronchitis. They also include annoyances like nose, throat, eye, or skin irritation. Headaches, dizziness, and nausea can also be caused by air pollution. Bad odours produced by factories, garbage, or sewer systems are also considered as air pollution. These odours are less severe, but they are still unpleasant.
- Air pollution's long-term impacts can continue for years or even a lifetime. They may potentially result in a person's death. Heart disease, lung cancer, and respiratory disorders such as emphysema are all long-term health consequences of air pollution. Air pollution can also harm people's nerves, brains, kidneys, liver, and other organs in the long run. Some scientists believe that air pollution causes birth abnormalities. Every year, almost 2.5 million people die as a result of the impacts of outdoor or indoor air pollution.

# Air Pollution

- Air pollution can have an impact on entire ecosystems. Like smog, haze is a visible kind of air pollution that obscures patterns and colours.
- When oxides of sulphur and nitrogen in the air combine with water and oxygen in the atmosphere, they can form acid rain. These air pollutants are primarily caused by coal-fired power plants and motor vehicles. Acid rain harms plants by altering soil composition; affects water quality in rivers, lakes, and streams; destroys crops; and can cause buildings and monuments to deteriorate.
- Global warming is a natural and manmade environmental phenomenon induced by air pollution. It refers to global warming caused by rising air and ocean temperatures. This temperature rise is being driven, at least in part, by an increase in the amount of greenhouse gases in the atmosphere. Greenhouse gases are substances that trap heat energy in the Earth's atmosphere. Carbon dioxide, Methane and Chlorofluorocarbons (CFC's) are examples of greenhouse gases.
- Depletion of Ozone Layer is also a severe effect of air pollution. The earth is surrounded by a layer of ozone that protects us from the ultraviolet rays coming from the sun. Being exposed to these rays can cause skin cancer and can finish phytoplanktons and zooplanktons. The ozone layer over the Antarctic circle were depleted once in 1980's.

As can be seen, that air pollution can affect our lives severely. Hence, we need to reduce it and try to find better ways in order to protect ourself and the environment. Everyone can take small steps to reduce the amount of air pollution. Some of them are mentioned below:

- Using public transport is a sure short way of contributing to less air pollution as it provides with less gas and energy, even carpools contribute to it. In addition to less release of fuels and gas, using a public transport can also help in saving money.
- **Reuse, Reduce and Recycle:** The concept of reuse, reduce and recycle is not just conserve resources and use them judiciously but also is helpful for air pollution as it helps in reducing pollution emissions. The recycled products also take less power to make other products.

# Air Pollution

- The use of plastic products could be very harmful to the environment as they take a very long time to decompose, due to their material made up of oil. The use of paper bags instead is a better alternative as they decompose easily and are recyclable.
- The collecting of garbage and getting it on fire in dry seasons or dry leaves catching fires is a huge factor for causing air pollution, moreover smoking also causes air pollution and causes the air quality to worsen along with obviously damaging one's health.
- The usage of AC's takes a lot of energy and emits a lot of heat which is bad for the environment. AC's also take a lot of power and energy to work as compared to fans.
- The gas that is emitted from fireplaces in homes and factories are extremely dangerous for air pollution and harms the air quality severely. The use of filters should be used at least if the consumption couldn't be lessened, this will help to reduce the effect of harmful gases absorbing in the air.
- The use of crackers during festivals and weddings is sadly one of the biggest contributors to air pollution, leading to a layer of smog which is extremely harmful for health. So, practice of no crackers should be implemented.
- Last but not the least, plant and grow as many trees as possible. The practice of planting trees provides a lot of benefits to the environment and helps with the release of oxygen.

Apart from these, the governments are working as hard as possible to set up norms and create a sustainably developed society. Worldwide, many countries have taken steps to reduce or limit greenhouse gas emissions to combat global warming. The Kyoto Protocol, first adopted in Kyoto, Japan, in 1997, is an agreement between 183 countries that they will work to reduce their carbon dioxide emissions.

In addition to the international Kyoto Protocol, most developed nations have adopted laws to regulate emissions and reduce air pollution. In the United States, debate is under way about a system called cap and trade to limit emissions. This system would cap, or place a limit, on the amount of pollution a company is allowed. Companies that exceeded their cap would have to pay. Companies that polluted less than their cap could trade or sell their remaining

# Air Pollution

pollution allowance to other companies. Cap and trade would essentially pay companies to limit pollution.

In 2006 the World Health Organization issued new Air Quality Guidelines. The WHO's guidelines are tougher than most individual countries existing guidelines. The WHO guidelines aim to reduce air pollution-related deaths by 15 percent a year.