

Air pollution summary assignment

[Environment](#), [Air](#)



On the other way, air pollution also can be defined as the chemicals, particulate matters or illogical materials that cause harm or discomfort to humans or other living organisms, or damages the natural environment, into the atmosphere. The rapid growth of industries has now spread to a number of developing counties of the Third World including Malaysia. Although the sizes of industrial plants in these countries are comparatively small by Western standards, it is important that the planner be aware of the cumulative effect of these many small industrial sources of pollution.

In Malaysia, 39 percent of the total pollution is contributed by industries. Of this industrial pollution, ore than 27 percent comes from wood-based industries. It has been estimated that only 20 percent of this wood waste was usefully recovered as fuel for boilers and kilns. There are many different chemical substances emit by mind Austria activities that contribute to air pollution. These chemicals come from a variety of sources. Among the many types of air pollutants are nitrogen oxides, carbon monoxides, and organic compounds that can evaporate and enter the atmosphere. Air pollutants have sources that are both natural and human.

Now, humans contribute substantially more to the air pollution problem. The effects of air pollution are diverse and numerous. Air pollution can have serious consequences for the health of human beings, and also severely affects natural ecosystems. Because it is located in the atmosphere, air pollution is able to travel easily. As result, air pollution is a global problem and has been the subject of global cooperation and conflict. Some areas now suffer more than others from air pollution. Cities with large numbers of

factories or those that use great quantities of coal often suffer most severely from problems of air pollution.

SOURCES OF AIR POLLUTION Different industries activities emit different pollutants. For example, the chemical industry releases emissions that contain many nitrogen and sulfur compounds while refineries discharge sulfur dioxide and hydrocarbons. The metal working industry is partially responsible for the emissions of sulfur dioxide and large amounts of toxic dust. (Text: ' Clean Air For Our Cities, 2006, by DOE Malaysia & German Technical co-operation) In addition, power plants represent the next large source of air pollutant emissions.

In many countries power supply is obtained very largely from fuel oil and in some instances coal. All our large power plants in Malaysia are using fossil fuels. Because sulfur is one of the major ingredients of these fuels, power plants are the greatest contributors of sulfur dioxide pollution. Of the total sulfur dioxide emission in Peninsular Malaysia, over 50 percent is produced by power plants. **Air Pollutants** An air pollutant is known as a substance in the air that can cause harm to humans and the environment. Pollutants can be in many forms which may be natural or man-made.

It can in the form of solid particles, liquid droplets, or gases. Carbon dioxide is one of the major industrial pollutants in the atmosphere. Major sources of CO are fossil fuels burning and deforestation which implicated by the development of the industry sector. The concentrations of CO in the air around 1860 before the effects of industrialization were felt, is assumed to have been about 290 parts per million (ppm). In the hundred years and

more since then, the concentration has increased by about 30 to 35 percent that is by 10 percent.

CO₂ is a good transmitter of sunlight, but partially restricts infrared radiation going back from the earth into space. This produces the so-called greenhouse effect that prevents a drastic cooling of the Earth during the night. Increasing the amount of CO₂ in the atmosphere reinforces this effect and is expected to result in a warming of the Earth's surface. Currently carbon dioxide is responsible for 57% of the global warming trend. Another type of air pollutant is carbon monoxide, which is a colorless, odorless, non-irritating but very poisonous gas. It is a product by incomplete combustion of fuel such as natural gas, coal or wood.

Vehicular exhaust is a major source of carbon monoxide. Nitrogen oxides such as nitric oxide (NO) or nitrogen dioxide (NO₂) also contribute most of the atmospheric contaminants. They are natural component of the Earth's atmosphere which comes from the burning of biomass and fossil fuels. The industrial activities produced 30 to 50 million tons per year. They cause the formation of both acid precipitation and photochemical smog (ozone), and causes nitrogen loading which can reduce the stratospheric ozone. Another type of nitrogen oxide is nitrous oxide (N₂O).

N₂O comes from nitrogen based fertilizers, deforestation, and biomass burning. The human inputs 6 million tons of N₂O per year. It can cause the greenhouse effect and causes nitrogen loading. Sulfur dioxide is produced by combustion of sulfur-containing fuels, such as coal and fuel oils. Sulfur oxides can injure man, plants and materials. At sufficiently high concentrations,

sulfur dioxide irritates the upper respiratory tract of human beings because potential effect of sulfur dioxide is to make breathing more difficult by causing the finer air tubes of the lung to constrict. Power plants and factories emit 90% to 95% of the sulfur dioxide (SO₂) and 57% of the nitrogen oxides in the United States. Almost 60% of the SO₂ emissions are released by tall smoke stacks, enabling the emissions to travel long distances. As emissions of SO₂ and nitric oxide from stationary sources are transported long distances by winds, they form secondary pollutants such as nitrogen dioxide, nitric acid vapor, and droplets containing solutions of sulfuric acid, sulfate, and nitrate salts. These chemicals descend to the earth's surface in wet form as rain or snow and in dry form as a gas fog dew, or solid particles.

This is known as acid deposition or acid rain. Chlorofluorocarbons, also known as Freon, are greenhouse gases that contribute to global warming. CFCs are lowering the average concentration of ozone in the stratosphere. "Since 1978 the use of CFCs in aerosol cans has been banned in the United States, Canada, and most Scandinavian countries. Aerosols are still the largest use, accounting for 25% of global CFC use". Spray cans, discarded or leaking refrigeration and air conditioning equipment, and the burning plastic foam products release the CFCs into the atmosphere.

Depending on the type, CFCs stay in the atmosphere from 22 to 111 years. Chlorofluorocarbons move up to the stratosphere gradually over several decades. Under high energy ultra violet (UV) radiation, they break down and release chlorine atoms, which speed up the breakdown of ozone (O₃) into oxygen gas (O₂). Besides that, volatile organic compounds (VOCs) are also an

important outdoor air pollutant. They are often divided into two categories which are methane (CH₄) and non-methane. Methane is an extremely efficient greenhouse gas which contributes to enhance global warming.

Other hydrocarbon Voss are also significant greenhouse gases via their role in creating ozone and in prolonging the life of methane in the atmosphere, although the effect varies depending on local air quality. Within the non-ethane, the aromatic compounds benzene, toluene and Selene are suspected carcinogens and may lead to leukemia through prolonged exposure, 1, 3-butadiene is another dangerous compound which is often associated with industrial uses. On the other hand, ammonia, which is emitted from agricultural processes is normally encountered as a gas with a characteristic pungent odor.

Ammonia contributes significantly to the nutritional needs of terrestrial organisms by serving as a precursor to foodstuffs and fertilizers. Ammonia, either directly or indirectly, is also a building block for the synthesis of many heuristically. Although in wide use, ammonia is both caustic and hazardous. Nevertheless, smog is created by burning coal and heavy oil that contain sulfur impurities in power plants, industrial plants, etc. The smog consists mostly of a mixture of sulfur dioxide and fog.

Suspended droplets of sulfuric acid are formed from some Of the sulfur dioxide, and a variety Of suspended solid particles. Smog's unpleasant properties result from the irradiation by sunlight of hydrocarbons caused primarily by unburned gasoline emitted by automobiles and other combustion sources. The products of photochemical reactions include

organic particles, ozone, aldehydes, nitrates, organic acids, and other oxidants. Ozone is a gas created by nitrogen dioxide or nitric oxide when exposed to sunlight. Ozone causes eye irritation, impaired lung function, and damage to trees and crops.

IMPACT OF AIR POLLUTION Air pollution is responsible for major health effects. Every year, the health of countless people is ruined or endangered by air pollution. The World Health Organization states that 2.4 million people die each year from causes directly attributable to air pollution. There are also studies that have estimated that the number of people killed annually in the US alone could be over 50,000. Older people are highly vulnerable to diseases induced by air pollution. Those with heart or lung disorders are under additional risk. Children and infants are also at serious risk.

Because people are exposed to so many potentially dangerous pollutants, it is often hard to know exactly which pollutants are responsible for causing sickness. Also, because a mixture of different pollutants can intensify sickness, it is often difficult to isolate those pollutants that are at fault. The health effects caused by air pollutants may range from subtle biochemical and physiological changes to difficulty in breathing, wheezing, coughing, bronchitis and aggravation of existing respiratory and cardiac conditions such as lung cancer.

These effects can result in increased medication use, increased doctor or emergency room visits, more hospital admissions and premature death. Another air pollution impact is the greenhouse effect that is a phenomenon whereby greenhouse gases create a condition in the upper atmosphere

causing a trapping of heat and leading to increased surface and lower troposphere temperatures. It shares this property with many other gases, the largest overall forcing on Earth coming from water vapor. Other greenhouse gases include methane, hydro fluorocarbons, per fluorocarbons, chlorofluorocarbons, and ozone.

Many greenhouse gas, contain carbon, and some of that from fossil fuels. Currently, scientists are studying the role of changes in composition of green house gases from natural and anthropogenic sources for the effect on climate change. Urban air pollution effects upon precipitation have been noted for a number of decades but were difficult to verify by statistical taste due to the gig variability of rainfall amount and the inadequacies of the ordinary rain gauge as a sampling device. These are known as weather and climate effect.

The effects of pollution modifying climate are less obvious on a global scale. Such modifications are being attributed largely to an increase in the emission of carbon dioxide and dust into atmosphere. Part of the carbon dioxide from combustion is consumed in plant photosynthesis, which restores the oxygen to the air. Another portion of the carbon dioxide is absorbed into the ocean and precipitated as carbonate solids. However, the large-scale burning of oil, AOL and gas has emitted so much carbon dioxide that a residual increase has occurred.