

ABSTRACT

In our daily busy life; automobile has changed our experience of journey. It has made very fast, comfortable and easy. On the other hand we have mixed the toxic in our environment. Some has come from industries and some of from the pumping and showing world. Some is necessary and some is not. But the common part of both is automobile As it is luxurious as necessary requirement also according to the time In our environment the automobile has provided hazardous gases and improve the temperature of our environment which all the root of disease. The temperature is also caused of global warming which is impact on ozone layer depletion. Ozone layer prevents most harmful UVB wavelengths (280–315 nm) of ultraviolet light (UV light) from passing through the Earth's atmosphere. It is suspected that a variety of biological consequences such as increases in skin cancer, cataracts, damage to plants, and reduction of plankton populations in the ocean's photic zone may result from the increased UV exposure due to ozone depletion. As a matter of fact, this layer very important for saving of human being. But due to increasing pollution. The average size of the 2012 ozone hole was 6.9 million square miles (17.9 million square kilometres). There is not end of all this, with this all. There we can realize there many changes in our ambient system. We have to face a lot of problems due to natural disaster. There more than 50% day in year when we have to face many disasters like earthquake, glacier melting, tsunamis etc. Due to the unbalance environment there is very big difficulty that we can't delay our progressive life. But we have to solve this problem; we take many steps to save our environment. With the results, we can increase the time of party and natural facilities gifted by God. For this we can use many technology which in favour of environment.

Key words:- UVB, CFC, VOCs, Nox,

1. INTRODUCTION

As far as scientists know, humans are the only creatures to create pollution. Take a walk outside. Everywhere you go there are signs of human impact on their surroundings. Environmental pollution can come in the form of an empty Mountain Dew bottle on the side of the road, a clear-cut forest, or tires in a landfill. Humans have had a significant impact (often negative) on their environment. Can you think of other forms of environmental pollution? Once you learn

how to start looking for signs of pollution, you can learn how to reduce pollution[1]

Pollution is the contamination of soil, water, or air by discharging harmful substances. The three basic types of pollution are: environmental (land), marine (water) and atmospheric (air). Environmental pollution affects the land. Litter, soil contamination, deforestation, and consumption of non-renewable resources are all forms of environmental pollution. Environmental pollution affects every living creature, even those found in the oceans and in the air.

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Air pollution caused by emission from engine especially that power the road transport in the urban centre all over the world has been of serious concern for the last several decades. In the early 1960's, legislation was enacted in the USA and, the European countries followed by soon after the passed laws to control and vehicle emissions. Since then, more stringent emission regulations have been enforced and many countries have joined the effort. In the recent year, global warming caused by carbon oxide emissions has added another dimension to the engine development. The engine and vehicle are being developed that are fuel efficient and are capable of running on renewable bio fuels.

2. AUTOMOBILE WASTAGE

A significant portion of industry and transportation is based on the burning of fossil fuels, such as gasoline, diesel. As these fuels are burned, chemicals and particulate matter are released into the atmosphere. Although a vast number of substances contribute in the form of wastage, the most common are carbon, sulphur, and nitrogen. These chemicals interact with one another and with ultraviolet radiation in sunlight in various dangerous ways. There are other many types of wastage 1) Liquid waste, 2) Solid waste, 3) Gaseous waste in liquid waste, there are many oils and lubricants like Vehicle Crankcase Oils, Engine Lubricating Oils, Transmission Fluids, and Gearbox and Differential Oils. In solid waste, There are many parts in automobile like Oil Filters, Fuel Filters, Air Filters, Oil Containers, Cans and Other Containers, Glass and Paper, Brake Shoes and Pads, Lead-Acid Batteries [2] Tires, In gaseous waste, there are many gases which release at the time of exhaust and other gases like CFCs (chlorofluorocarbons) which is use CFC-12 as a cooling agent. CFC-12 is one of the chemicals known to destroy the ozone layer, our planet's protection against harmful rays from

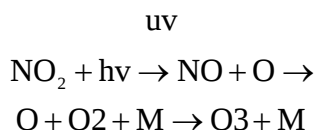
the sun. This has led to the phasing out of CFC-12 from usage in the modern automobile. And Volatile organic compounds (VOCs) which are found in many cleaning solvents spray cleaners, and other processes used in the automotive industry.

3. POLLUTION BY THE AUTOMOBILE

Automobile release the many wastage either in the form of liquid or gaseous and other forms which are the cause of environment pollution. These components are mainly name NO_x, hydrocarbon (HC) and carbon monoxide (CO). In the exhaust from the tail pipe is the most easily identifiable pollutant related to cars. The vehicle primary the harmful gases CO, un burnt fuel/ hydrocarbons (HC) also called as VOCs [4], among the mobile sources, diesel vehicle are main contribute to smoke particular emission. Vehicle also emits sulphur di-and tri-oxide (SO_x), their amount depending upon the content of engine fuel. The incomplete combustion of the hydrocarbon fuels that provide the power for the cars are primarily responsible for this exhaust spewed into the air. Among the chemicals present are carbon dioxide (CO₂), nitrogen oxides (NO, NO₂), sulphides, particulate, and various other chemicals.

3.1 Oxides of Nitrogen

The NO_x formation is due to availability of high temperature and sufficient oxygen in the presence of lean mixture or rich mixture. The principle of oxide of nitrogen formed is NO. The concentration of NO₂ is small in SI engine emission (less than 2% of nitrogen oxides), but is high in diesel engine ranging from about 10 to 20 percent. NO₂ is a strong oxidant and in the presence of ultraviolet radiation leads to formation of ozone via NO₂ - Photolysis as below: [5]



Where M is the third body needed to observe the energy of reaction. Carbon monoxide is formed due to deficient of oxygen during combustion. It is an order less gas but is highly toxic. Carbon monoxide (AKA: “the silent killer”) is renowned for the difficulty of identification. Carbon monoxide is a colourless, odourless, tasteless, and non- irritating gas that is toxic. CO₂ enters the bloodstream through the respiratory system where it forms carboxyhemoglobin, a compound that inhibits the blood’s capacity to transport oxygen to the necessary organs and tissue. This compound is especially deadly to persons with heart disease, infants, elderly persons, and persons with respiratory diseases. The risks to healthy people include impairing of visual perception, learning g ability, dexterity, exercise capacity, and the ability to perform complex tasks. CO is a major cause of photochemical smog, which is commonly referred to as “Los Anglessmog.



Fig. 1. (Vehicle pollution Analyser)

Vehicle Hydrocarbon (HC) Carbon monoxide (CO)	Tata indigo eCS(CI engine)	Mahindra B275 Di(CI Engine)	Maruti Suzuki Eco(CNG)
0.0	0.0	0.0	1.0
.0	.04	.04	004

Carbon dioxide	0.04-0.05	1.88	0.5
Oxides of nitrogen(N Ox)	0.0	0.0	0.0
Oxygen (O2)	0.22	9.21	20.78

Table No. (1)

3.2 Carbon Dioxide

In recent years, the U.S. Environmental Protection Agency (EPA) has started to view carbon dioxide, a product of “perfect” combustion, as a pollution concern. Carbon dioxide does not directly impair human health, but it is a “greenhouse gas” that traps the earth’s heat and contributes to the potential for global warming.

3.3 Sulphur Dioxide

Atmospheric sulphur is primarily in these forms, SO₂, H₂S and sulphates. H₂S is devalued primarily from natural sources. SO₂ comes primarily from man caused events; the sulphates come primarily from sea spray and from oxidation of SO₂. It is estimated that 70% of SO₂ comes from the combination of coal. It is clear that mass rates are high with respect to the mass in the atmosphere. With regard to health, a concentration of 0.6 ppm will produce no detectable response in healthy human; most people can detect 5 ppm and find 10 ppm quite unpleasant. The situation is further complicated by the interaction and increased toxicity in so far as health is concerned when sulphur dioxide, high air temperature, high air humidity, aerosols, etc are simultaneously present.

3.4 Lead

Concern with atmosphere lead arises primarily from its use as a gasoline additive, test have shown fairly conclusively that lead concentration in the atmosphere below traffic density patterns. The reason shows that approximately 70% of the lead used in car is emitted from the tail pipe with 30% setting almost immediately to the ground and the 40% becoming air burns and causing deflecks. The lead appears in the exhaust as $PbCl$. The particle size of the discharge lead compounds various from those of less than 0.01 micron to those of many millimetres. The air burns lead is small in mass in comparison with that taken in via food and water, but that a higher percentage of the airborne lead reaches the blood.

3.5 Evaporative Emissions

Hydrocarbon pollutants also escape into the air through fuel evaporation. With today's efficient exhaust emission controls and today's gasoline formulations, evaporative losses can account for a majority of the total hydrocarbon pollution from current model cars on hot days when ozone levels are highest. Evaporative emissions occur several ways:

3.6 Diurnal

Gasoline evaporation increases as the temperature rises during the day, heating the fuel tank and venting gasoline vapours.

3.7 Running Losses

The hot engine and exhaust system can vaporize gasoline when the car is in running condition

3.8 Hot Soak

The engine remains hot for a period of time after the car is turned off, and gasoline evaporation continues when the car is parked.

3.9 Refuelling

Gasoline vapours are always present in fuel tanks. These vapours are forced out when the tank is filled with liquid fuel.

4. EFFECT ON OZONE LAYER

The ozone layer is not really a layer at all, but has become known as such because most ozone particles are scattered between 19 and 30 kilometres (12 to 30 miles) up in the earth's atmosphere, in a region called the stratosphere. This layer absorbs 93-of the sun's high frequency ultraviolet light, which is potentially damaging to life on the earth [1]. Over 91% of the ozone in the earth's atmosphere is present here. Ozone levels in many cities have come down with the introduction of lower volatility gasoline and as newer cars with improved emission control systems replaced older models. But there has been significant progress since 1970 in reducing emissions per mile travelled, the number of cars on the road and the miles they travel almost doubled in the same time frame.

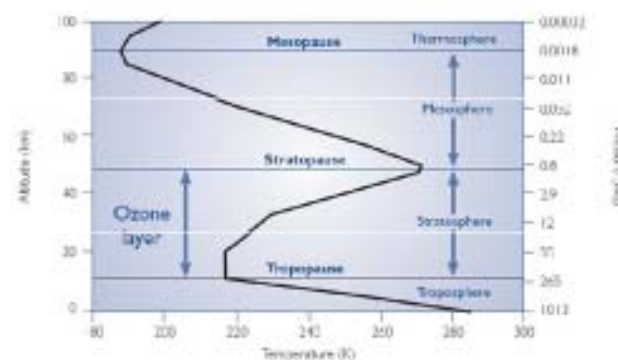


Fig.2. Altitude vs Temperature

A second reason that ozone levels remain high is that emission control systems do not always perform as designed over the full useful life of the vehicle. Routine aging and deterioration, poor state of tune, and emission control tampering can all increase vehicle emissions. In fact, a major portion of ozone forming hydrocarbons can be attributed to a relatively small number of "super-dirty" cars whose emission control systems are not working properly.

4.1 How does air pollution affect troposphere ozone, or ozone in the air we breathe?

Air pollution is inclusive of ozone. Ozone is made by NO_x (a by-product of combustion), VOCs (unburned fuel and compounds from natural sources too), and violet to ultraviolet light from the sun. So air pollution and sunlight makes more /different air pollution.

4.2 How does air pollution affect the ozone layer?

There is no direct link between air pollution and the ozone layer. However, combustion process decreases oxygen and increase water vapour. Both of these serve to decrease ozone concentration in the upper atmosphere. It just takes months for some of these “pollutants”(or decreased oxygen levels) to propagate to the upper atmosphere. Probably more damaging is the loss of plants.

Bus exhausts consumer’s oxygen, which can in part reach the tropopause increase the rate at which ozone decays.

However, bus exhaust will have a smaller net effect on the “ozone layer” than each passenger driving his own car.

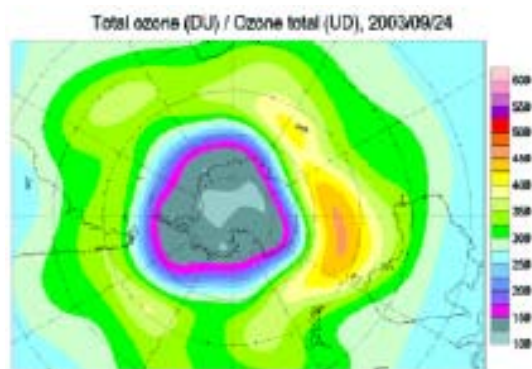


Fig. 3. Ozone layer depletion over Antarctica

Ozone is catalysed to decay by the presence of water vapour. Car produces water as a waste product, so increase the humidity that is available to eventually migrate up to the tropopause. Car produce NO_x and VOCs, which produce ozone at low

altitude, where it does nothing to protect us, yet further reduces ozone at low available and migrate up to help make ozone altitude too. Note that aircraft do all this much closer to the tropopause.

All of this is also true (except for the NO_x part) of the little 80watt light bulbs that are called people. And decay on forest floors, waste heaps, and sewage treatment plants. Which is not to say “ozone holes” do not form naturally? Which is not to say that if ozone is destroyed in the tropopause, it will not form at any altitude that 215nm UV reaches, only that all processes are interconnected?

Pollutants can cause Ozone Layer Depletion, and large gaps to form in the ozone above a certain specific area. We have identified some compounds in the “ozone hole”, and they were primarily (at one time) refrigerants. Burning fossil fuels produces CO₂ it is the CO₂ that is destroying to ozone layer. The fuel that makes ozone layer thin. Water vapour in air pollution block one path of ozone formation (involving N₂O), and accelerates the natural decay of ozone (via formation of H₂O₂). To the extent that air pollution increases temperatures, increasing temperature increases the rate of ozone decay. If air pollution includes compounds that are not fully oxidized, and they make it as high as the “ozone layer”, ozone will consume in oxidizing them. If air pollution is produced by lowering oxygen concentration, then less ozone is made by the sun, since ozone is made from oxygen. Exhausts give off CFC’s (chloro flora carbons) which harms the ozone. Other dangers gases are given off to such as carbon monoxide.

Air pollution has thinned the protective ozone layer above the earth because it damages our ozone layer. Pollution is bad. Burning of some fossil fuel can be bad. They have virtually zero influence on the ozone layer. The cycles of our sun carry a big effect on the layer prior to detecting the comments they disagree with.

5. DISASTERS BY POLLUTION

Natural disasters — such as earthquakes, tidal waves and floods — often result in wide scale pollution. But in recent decades, it is disasters caused by people (or their inventions) that have been increasingly responsible for environmental pollution. One such disaster is an oil spill. It may be caused by:

Deliberate destruction (e.g. during the Gulf War, oil wells were blown up) burst underwater oil pipes Damageto an offshore oil refinery An oil tanker running aground, sinking or colliding with another ship.

Winds and tides carry oil spilt into the sea far from the source of contamination. Often it ends up in highly sensitive environments. Pristine beaches may be covered with the black ooze for years. Wildlife such as seals and penguins may be coated with the sticky oil so completely that they cannot breathe properly. Fish can die in their thousands. As the food chain is further contaminated, by creatures ingesting oil, animals are poisoned slowly, or simply starve to death. It may take years for breeding grounds and sensitive habitats to recover. The clean-up process is expensive, and at times heart breaking.

Environmental pollution caused by the wastes generated from the activities of the human beings has been continuously increasing. Pollution problems has been reaching to significant levels by the large amount of wastes generated from the natural disasters such as earthquakes, volcanic activities, natural forest fires, tornados, flooding, tsunami, etc. Since these wastes are generated at huge amounts at a very short time period, their management in both economically and environmentally sound manner is difficult (Petersen, 2004). On the other hand, if they are not managed properly immediately, they become a threat both to the environment and public health (Srinivas and Nakagawa, 2008). Earthquake is a

geologic phenomenon which requires extraordinary effort to cope with (Gunn, 1990. Young et al., 2004). Generally buildings, bridges, dams, factories, chimneys of factories, monuments collapse, fire starts, communication lines and power plants and drinking water and sewer systems damage during the earthquakes. The demolishing wastes block the roads causing the reaching of the rescue groups and the necessary heavy duty machines/equipment to the disaster area very difficult and sometimes impossible. Due to the damage of the communication lines, the authorities cannot obtain dependable information about the Disaster area and cannot give the necessary orders to the related people. Also, clean drinking water cannot be supplied to the people and sewage is spread around causing the pollution of the soil and threatening the public health. Due to the damage of the fire, department and vehicles as well as the disabled appointed personnel and blocking of the roads disaster areas are not reached easily. Rescued people from the earthquake and fire areas cannot be treated properly because of the collapse of the health-care institutions, disabled/impaired medical doctors and health-care personnel. If the relief and rehabilitation programs are not applied immediately and the wastes are not removed properly, they will cause the spread of epidemic diseases. Thus, waste management and disposal have become as very significant issues after the occurrence of the disasters (Peterson, 2004; Diaz, 2005. UNEP, 2005; Shaw, 2006; Karunasena et al., 2009). Contamination of the environment and the drinking water sources with the various chemicals from the demolished and damaged factories cause significant disasters to the public health beside the deterioration of the environment. Also irritating odors and spread of epidemic diseases take place due to the dead bodies which are not buried immediately. Air pollution caused by the fires at the inhabited areas will reach to

significant levels by mixing with the toxic and carcinogenic gases emitted from the damaged factories. Another significant negative impact is the disposal of demolishing wastes having pH of 12.5 or more, causing the changing of the marine ecology and threatening the aquatic life. Scientists expect the combined effect of recent stratospheric ozone depletion, and its continuation over the next one to two decades, to be (via the cumulation of additional UVB exposure) an increase in skin cancer incidence in fair-skinned populations living at mid to high latitudes.

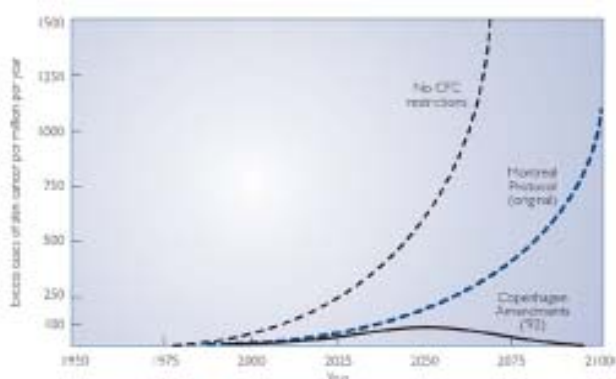


Fig.4. Estimation of ozone depletion skin cancer

Now what to do to solve problem?

For a long time we've been told of the consequences of polluting our land, water and air.

But, how do we reverse the trend? The best way to combat pollution is through education. When we learn what causes pollution, what its effects are, we can think of solutions and think help prevent it. We all have needs. The earth is very generous in supplying humans with an abundance of natural resources to help us exist more comfortably. Coal can be turned into electricity, which helps to provide humans with light. The sea provides us with enough cod (as well as many other types of fish) to feed the people who live in the coastal regions. The truth is that natural resources are provided to us for us to consume.

Yet we need to consume responsibly.

Simply by turning off a light switch when you leave a room, riding your bike instead of driving, or re-using grocery bags, you are helping to reduce your consumption of resources. There are tons of ways you can help the environment and reduce pollution. After all the easiest way to reduce pollution is to reduce consumption. By reducing the amount of resources we use and making simple, environmentally friendly decisions, we can help to reverse the global trends of pollution.

Reducing, Reusing, and Recycling are the simplest ways of combating pollution!

We cannot completely stop the pollution, but we are trying to prevent and reduce it. In Automobile industry use a reuses source and use that type of fuel. which has not participated in pollution like hydrogen fuel. In the present era our lifestyle has completely changed and now we all are addictive to luxurious journey. Now we can't stop pollution completely but we can reduce it by using following:

5.1 Fuel cells

The fuel cell makes sense when the energy storage required by an application represents many hours of operation at full power. The durability of batteries in this sort of application is at best a few hours. The size, weight, and cost of energy storage for a fuel cell power plant easily out competes batteries. You do have the fixed cost (and size and weight) of the plant, which is a function of power. This is why it is important to note that the advantage of fuel cells is for low power, high energy applications.

5.2 Renewable Energy Systems

Hydrogen can be produced sustainably with no emission of carbon dioxide from renewable energy systems. An example of such a system is the use of a solar panel, a wind turbine or a micro-hydro generator to convert the radiant energy of sunlight into electrical

power, which drives an electrolyzer. The electrolyzer breaks apart water producing hydrogen and oxygen gases. The hydrogen is stored for use by the fuel cell and the oxygen is released into the atmosphere. Thus, when the sun shines, the wind blows or the water flows, the electrolyser can produce hydrogen.

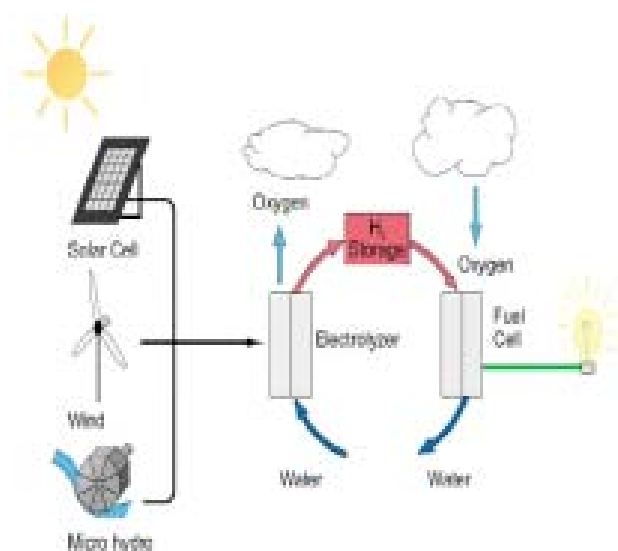


Fig. 5. Schematic diagram for multi energy source

6. CONCLUSION

With the help of the above studies we have come to know the dangerous effect of pollution in the form of natural disasters and in the form of diseases like as skin cancer and eye burn. According to the demand of the passage, we all have to adjust with our luxuries and the technology. We can provide a big contribution by using solar energy, biomass, wind energy and other renewable energy sources. By the use of electrical vehicle we can reduce the harmful exhaust of gases. If every person does the same for a day in a week, we can reduce 1-2% of the pollution in the environment.

With the use of hydrogen as a fuel we not only reduce the exhaust of gases but can also get much work in the same amount of fuel. Hydrogen the best

fuel it doesn't produce any wastage and has a large amount of energy. We all have not to stop our developing work we have to change the way only for the welfare of future. It is tough but not impossible.

With challenge for green environment...

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