

Ozone layer depletion essay



**ASSIGN
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OZONE LAYER DEPLETION

“ A giant asteroid could hit the earth! Something else could happen! The global temperature could rise!

Wakeup!”(edf. org)

Science is a body of knowledge containing various streams such as physics, chemistry, biology etc. “ Its sub-behavioral concept is Technology, which has made tremendous changes in the modernized world. Climate is a field of the science. Climate is a natural consequence in which all the human beings exist.”(Technology and Environment page 25). “ The first thing people see, in the morning, when they walk outside is the sky or the colored sun. Is this world giving us the privilege of seeing the natural colors of the sun through all the layers of pollution within the air?”

A blanket of air, which we call the atmosphere,

surrounds the Earth. It reaches over 560 kilometers (348 miles) from the surface of the Earth, so we are only able to see what occurs fairly close to the ground. Early attempts at studying the nature of the atmosphere used clues from the weather, the beautiful multi-colored sunsets and sunrises, and the twinkling of stars. With the use of sensitive instruments from space, we are able to get a better view of the functioning of our atmosphere. “ The atmosphere, solar energy, and our planet’s magnetic fields support life on Earth. The atmosphere absorbs the energy from the Sun, recycles water and other chemicals, and works with the electrical and magnetic forces to provide a moderate climate. The atmosphere also protects us from high-energy radiation and the frigid vacuum of space. The envelope of gas surrounding the Earth changes from the ground up. Four distinct layers have been

identified using thermal characteristics (temperature changes), chemical composition, movement, and density.

That comprises of Troposphere, Stratosphere,

Mesosphere and atmosphere. The atmosphere is

primarily composed of Nitrogen (N₂, 78%), Oxygen (O₂,

21%), and Argon (AR, 1%). Argon includes all the other

gases present in the atmosphere. A myriad of other very

influential components are also present which include

the water (H₂O, 0 – 7%), “ greenhouse” gases or Ozone

(O₃; SUB3, 0 – 0. 01%), Carbon Dioxide (CO₂, 0. 01-0. 1%),

The envelope of gas surrounding the Earth changes from

the ground up.”(Climate of Hope, p. p. 2563)

Now, the interesting fact is the information of a

layer of atmosphere, which surrounds our atmosphere.

“ Orbiting above the Earth, an astronaut can look down

on our home and see the thin blue ribbon that rims our

planet. That transparent blanket in our atmosphere

makes life possible.” Yes, It is the Ozone Layer. It provides the air we breathe and regulates our global temperature. And it contains a special ingredient called ozone that filters the solar radiation. Life as we know it is possible in part because of the protection afforded by the ozone layer.. The term itself comes from the Greek word meaning “ smell,” a reference to ozone’s distinctively pungent odor. “ Each molecule contains three oxygen atoms bonded together in the shape of a wide triangle. In the stratosphere, new ozone molecules are constantly created in chemical reactions fueled by power from the sun. The recipe for making ozone starts off with oxygen molecules. When struck by the sun’s rays, the molecule split apart into single oxygen atoms, which are exceedingly reactive. Within a fraction of a second, the atoms bond with nearby oxygen molecules to form triatomic

molecules of ozone”(Climate Change).

“ Ozone is an allotrope of Oxygen. Allotropes are two or more forms of an element with different chemical and physical properties. Molecules of diatomic oxygen, the form of oxygen with which most the people are familiar, contain two atoms each, as shown the formula O_2 . In contrast, molecules of ozone contain three atoms each and are represented by the formula O_3 .”(Kelvin, page 46). Both oxygen produces ozone and anthropogenic (human caused) sources. In the troposphere the layer of atmosphere nearest to the earth’s surface, ozone is generated in a complex series of reactions associated with the combustion of fossil fuels. “ Ozone is most commonly found in the air above the urban areas where sunlight initiates these reactions among the products released from automobile and truck exhausts. Since troposphere ozone can cause

damage to the living organisms, especially plants, it

is regarded as pollutant. The solution is very

different in the stratosphere, the next higher layer

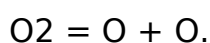
of the atmosphere. Thee ozone is produced by natural

processes. And had a beneficial function for the

terrestrial organisms” (M. Minaret’s,). In the

stratosphere, radiant energy from the sun can cause an

oxygen molecule to break apart into two oxygen atoms:



Each oxygen atom can then react with other oxygen

molecules to form ozone.



The stratospheric concentration of ozone therefore

represents a balance, established over the aeons,

before creative and destructive forces.” The total

level of ozone in the stratosphere remains fairly

constant, an arrangement resembling a tank with open

drains.) For about a billion years, the natural ozone system worked smoothly, but now human beings have upset the delicate balance. By polluting the atmosphere with additional chlorine-containing chemicals, we have enhanced the forces that destroy ozone — a situation that leads to lower ozone concentrations in the stratosphere. “ The addition of these chemicals is the same as drilling a larger “ chlorine” drain in the tank, causing the level to drop. “(Flavin, Introduction)

Stratospheric ozone is primarily created by ultraviolet (ULTRA VIOLET) radiation. The Sun’s output affects the rate at which it is produced. The Sun’s energy release in the ULTRA VIOLET part of the spectrum does vary, especially over the well-known 11-year sunspot cycle. Observations over several solar cycles since the 1950s show that total global ozone

levels decrease by 1 to 2% from the maximum to the minimum of a typical solar cycle. Even as the sun's energy produces new ozone, natural compounds containing nitrogen, hydrogen, and chlorine continuously destroy these gas molecules. Such chemicals were all present in the stratosphere — in small amounts— long before humans began polluting the air. Nitrogen comes from soils and oceans, hydrogen comes mainly from atmospheric water vapor, and chlorine comes from the oceans. “ By the middle of the twenty first century, there is evidence that the Earth will be warmer than it has been at any time in human history, and quite possibly since the end of the dinosaurs, some 65 billion years ago. If we stay at the rate we our now (fossil fuel consumption / growth in population) then within the next two century the Earth's air might not be fit to breath.” “ The term

greenhouse effect is used to describe the increased warming of the Earth's surface and lower atmosphere due to increased levels of carbon dioxide and other atmospheric gases that absorb radiated energy in the atmosphere and then reradiate it back to the surface.

The recently -observed long-term changes in ozone are much greater than this. They cannot be attributed to changes in solar activity. "(Cogan, p. p. 2432).

Here comes about the major scientific problem occurring in today's climate causing warming of earth and leading world atmosphere to dangerous consequences. Yes, it is the hole in the ozone layer known as the " Ozone Layer Depletion". Gradually, it has become clear to scientists and to governments alike that human activities are threatening our ozone shield. Behind these environmental problem lies a tale of twin challenges: the scientific quest to understand

our ozone shield and the debate among governments over

how to best protect it. Ozone layer Depletion is now a

days a very major scientific problem. A totally

depleted ozone layer would render the earth's surface

inhabitable. " In the U. S. by the next century if the

matter of ozone was not looked into

"(globalwarming. org). " We wouldn't be able to go

outside without wearing hats at that time, and we

wouldn't be able to build things out of plastic and

rubber that would be exposed to the sunlight because

they would deteriorate much faster," says Toyland,

environmental protection specialist working with the

united states environmental protection agency, while

speaking about the worst effects of the ozone layer

depletion"(Atmospheric Ozone-I). Looking at these and

many such effects one wonders as to what depletion

actually is? And what are the impossible solutions for

it? To understand it clearly, we should look in the matter in four steps, What is causing the depletion of the ozone layer? What are the effects of depletion of ozone layer and what are possible solutions to the problem? “ Damage to the ozone layer has dangerous consequences for humans, because the ozone molecules function As a shield from the sun’s radiation, absorbing some of the harmful ultraviolet rays, before it reaches the earth’s surface” (greenhouse. net).

“ Concerns about damage to the ozone layer go back to the early 1970’s. A number of scientists were concerned by two possible threats to the ozone layer: rockets fired off by the U. S. National Aeronautics and space Administration (NASA) and proposed Supersonic (SST) aircraft. Calculation suggested those chlorine atoms released by rockets and SST’s could bring about the decomposition of ozone molecules with

a subsequent deterioration of the ozone layer. In

1974, however, an even more troubling threat to the

ozone layer was identified. “(Atmospheric Ozone -II).

“ Two American scientists Mario Molina and F. Sherwood

Rowland, hypothesized that a group of compounds known

as chlorofluorocarbons (CFC’s) could release chlorine

in the stratosphere and damage the ozone

layer” (American Geophysical Union, Journal). CFC’s are

simply organic compounds made up of chlorine, carbon

and fluorine. “ The fact that (CFC’s don’t break down

is a benefit for their many applications but a curse

for the stratospheric ozone. They have become very

popular as a propellant in Aerosol sprays such as

deodorants, hair sprays, spray paints, pesticides and

similar materials (P4). Because CFC’s are not

dissolved by rain, over the years they rise, over the

years they rise to the ozone layer in the

stratosphere, about 10 to 20 miles (15 to 30 kilometers) above the earth's surface.”(Atmospheric Ozone-III) There, CFC's can linger for 100 years, while the sun's harsh radiation breaks them down, releasing atomic chlorine. One chlorine atom can destroy more than 100, 000 ozone molecules (Transportation, pp. 67-72). a group of scientists including the Nobel prize winner Mario Molina, in the late 70's discovered another chemical that was gobbling up the earth's ozone. “ The chemical was known as Methyl Bromide. Methyl Bromide was widely used as a soil fumigant in growing certain fruits and vegetables” (Earth Care Annual).

Ozone's structure allows it to absorb a certain kind of ultraviolet sunlight that would otherwise reach the surface of the earth and affect the living material (Hazardous Air Pollutants, page35). Ozone's absorption

of ultraviolet rays is critical for the well being of mankind. “ ULTRA VIOLET radiation is typically broken down into three parts: ULTRA VIOLET-a (320 to 400 NM), ULTRA VIOLET-b (280 to 320 NM), and ULTRA VIOLET-c (200 to 280 NM). ULTRA VIOLET-c is quickly absorbed by small amounts of Ozone, (Earth care Annual, page 2637) Exposure to ULTRA VIOLET-b can cause damage to DNA (which carries the genetic information in living organisms). Changing regional climate could alter forests, crop yields, and water supplies. It could also threaten human health, and harm birds, fish, and many types of ecosystems. Deserts may expand into existing rangelands, and the character of some of our National Parks may be permanently altered.

Unfortunately, many of the potentially most important impacts depend upon whether rainfall increases or decreases, which can not be reliably projected for

specific areas.”(Hazardous Air Pollutants, page 53129).

Scientists have been seriously considered this problem and have been working towards the solution of this problem. There have a few good proceedings, but there is no perfect solution for it as for now. “. One of the most serious effects of global warming, as it continues to intensify, is the increase in the ocean levels. “ Thermal expansion of the ocean and glacial melting are likely to cause a . 5 to 1. 5 meter rise in the ocean level by the year 2100. As the ocean level rises and if no protection is provided, many freshwater supplies could be jeopardized. Tens and possibly hundreds of millions of people will lose their water supplies to salt water intrusion because of sea level rise. The warming of ocean surface waters could possibly create more powerful hurricanes,

cyclones, and windstorms. “(Benarde, page 59).

Global warming will also have a drastic effect on the climate of the world in areas such as weather patterns and water resource supplies. The Thinning off the earth’s ozone layer has allowed greater amount of skin-burning UV-radiation from the sun to reach the earth. Increased exposure to UV has been shown to harm human health, damage freshwater and marine ecosystems, reduce crop yields, and affect forests. The most basic impact for humans is the increase in skin cancers.

Over exposure to the sun’s UV rays can also cause eye damage, including cataracts, and may even weaken the immune system. It has impact on agriculture, including many of the world” major food crops. It has been observed that some crops, such as barley and oats, have shown decreased growth as a result of exposure to increased UV- radiation. In marine ecosystems, it can

damage the tiny single-celled plants, known as phytoplankton, which form the base of the food chain.

Decreases in the food source at this early stage, may have effects throughout the entire system, and could

ultimately affect fish populations. Increased UV

levels also reduce the lifetime of construction

materials used outdoors, particularly the plastics

that are prevalent in our homes, playgrounds, and

other structures. Forestry research found that trees,

which grow at higher elevations, are more resistant.

Global warming research is giving more indications,

although certainly not proof, that highly volatile

weather patterns are one of the consequences of rising

atmospheric concentrations of greenhouse gases.

“ These altered weather patterns can have many effects

such as floods, droughts, and reduction in the amount

and quality of water resources. There is no

indication whether there is going to be an increase or decrease in the total precipitation.”(Bigg, page 399).

Many areas will have a substantial amount of rainfall causing severe flooding, while other areas will have major droughts. “ However global warming will create a decrease in the snow pack in many mountainous areas because the high winter temperatures could cause more precipitation to fall as rain than as snow. This could create a run off that would fill downstream reservoirs too early. Thus, during the spring when the reservoirs are normally filled, they would not be able too, because of the early snowmelt. As a result, the reservoirs would have a reduced amount of storage for the summer and fall.”(Hewitt, page 486). Some other areas that are effected by the increase in greenhouse gases are agriculture and ecosystems.

Lower water supplies and increased weather variability

may hurt the agriculture industry. On the other hand, a longer growing season and increased growth that would be stimulated by higher levels of carbon dioxide may also help it. “ The increase in temperature and dryness could also effect plant life and animal life.

Natural ecosystems are in delicate balance with their environments and climates. The impacts of climate change become more severe with increases in both the magnitude and the rate of change.”(Russell, p. p. 329538).

If the temperatures do rise as predicted several things could happen. “ The increases of temperature could alter the growth of crops in areas near the equator due to insufficient rain and heat. This could really hurt countries that rely on imported food.

With the high temperatures the polar ice caps could melt and cause the sea water level to go up 1 to 3

feet. This increase could take out small islands, coastal cities and some shallow rivers. The Everglades in Florida would be almost if not totally wiped right off the map. The Everglades is the home for many animals and plant life. If it did get flooded, they would all have to move northward across very dry land which they will not be able to endure for very long. When the hot temperatures do spread southward and northward, tropical disease will spread with it. Disease that were down in Mexico will maybe occur in The Carolinas or eventually Vermont. These new diseases will be hard to deal with causing many more deaths and illnesses than before. The financial problem with this is, that the flooding will cause dams to be built and cities to be reconstructed. The shortage of food will cause the price of the food to go up and with all the diseases we will need more

medical supplies and workers. All of this combined could and will cost a lot of money if we don't do something about it now. The computer models can't predict exactly what the climate is going to be in the future, but they can come close to what it will be like down the road. Scientists proved this by predicting with computers what the climate was in the past. "(enviroweb. org).

Looking at the units used to measure the ozone concentration are the Dobson Unit(DU)- the principle unit for measuring ozone concentration. One DU is about twenty- seven million molecules per square centimeter(the palm of your hand covers an area of roughly a hundred square centimeters). The ozone concentration over the US is about 300 DU and the antarctic hole during the late spring can drop to 117 DU. The another is Mixing ratios: within a specified

volume, it is a fraction of the number of molecules of a particular gas divided by the total number of molecules in that given space.

” The Cretaceous occurred over 100 million years ago.

It was the warmest period we have knowledge of yet.

There was so much carbon dioxide in the air that the

oceans rose many meters. North America was flooded

and split apart into two pieces. The temperature then

was more than fifteen degrees greater than the average

temperature today. “(gcrio. org). Scientists believe

that the tilt of the earth’s axis changes to tilt the

opposite way every 10, 000 years like a cycle. While

going through this cycle it will change the climate of

areas. Right now it is moving so that North America

is going to be close to the sun in the winter.

Seasons become more extreme when the opposite happens.

This controls the cycle of ice ages. “ Volcanoes when

they erupt, send clouds of dust into the air blocking sunlight. This would cool the earth off more. Oceans are known to absorb CO₂ because of the ocean currents and the action of plankton. There is some evidence that there is naturally rapid climate change between each Ice Age, which confuses the whole global warming and idea. "(toowarm. com).

While it's true that volcanoes and oceans release large amounts of chlorine, the chlorine from these sources dissolves in water so it washes out of the lower atmosphere in rain. CFC's do not dissolve in water and are not broken down in the lower atmosphere. Human-made molecules reach the stratosphere and then release chlorine and bromine. Measurements show that the increase in stratospheric chlorine since 1985 matches the amount of CFC's and other ozone-depleting substances released by human activities. The first

real evidence of ozone depletion was reported in 1985 by the British Antarctic Survey team, which had been measuring the ozone layer over the South Pole for 18 years. Here, they found a dramatic thinning in the ozone layer, which developed every year from September to November. They determined that this “ hole” first began forming in the mid 1970’s. Since then ozone concentrations in this area have grown steadily thinner, with depletions of up to 60 percent occurring in recent years. While industrial chemicals are the primary cause of ozone depletion, the extreme cold and weather conditions of arctic winters contribute to its depletion. As the temperatures drop., ice clouds form in the upper atmosphere. These clouds provide a “ spot” for a combination of chemicals and sunlight to react with CFC’s, releasing the chlorine to attack ozone. Thus ozone layer depletion is more severe near the

poles. Every human being should take part in the fight to stop global warming. “ The government is the key to this and they better do something soon or it will be too late. First, the American government should sponsor a meeting between the nations of this world. They should establish a committee for handling the money, politics, and scientific research in order to help cut back the emission of gases into the atmosphere. Every country will contribute by donating money. Each country would be required to give 0. 01 of their GNP to this committee. If they refuse they will be boycotted and the participating countries will sell nothing to them. “(Epa. gov/ozone).

Global warming is a big threat to our nation and the world. If we do not act now, it may be too late. “ The Sea levels could rise at 2 to 5 times the rate of the past 100 years, endangering coastal areas

in the Americas and Europe, and devastating island nations like Indonesia, where more than 45 million people live at coastal elevations within a meter of sea level. The Air pollution could get much worse. All areas, not just major cities, could see an increase in the pollutants that increase the frequency and severity of asthma attacks, emphysema, bronchitis, other lung diseases etc. These predictions come from the United Nations Intergovernmental Panel on Climate Change (IPCC), a 2, 000-member body of international climate scientists and experts that is recognized as the authority on the science of global warming. The other major effects severely caused by the ozone layer depletion are spreading diseases and illness, crop losses, coastal flooding and loss of drinking water supplies, droughts etc. Of course, there is no sure way of telling if there actually is a greenhouse

effect, but lets not take any chances. Look at what is happening to this world, and you will see that there is a pollution problem. “(Epa. gov/ozone).

Many people suggest that the uncertainties of global warming provide an excuse to do nothing and wait for more scientific research to be done. “ The main solution is to slow down the change of the climate by reducing the amount of greenhouse gases emitted into the atmosphere. “ Solar energy, wind, hydrogen gas, biomass, and other renewable energy sources also need to be used and deeply considered as solutions to slow down global warming, and reduce carbon dioxide emissions to the atmosphere. Deforestation must be slowed and reforestation of previously forested land that has become agriculturally useless has to be promoted. That will require conservation incentive schemes and improvement of farm yields to reduce the

pressure to clear new land. This will not be nearly as expensive as coping with the costs of global warming.”(Ewann, page 87183). Controlling populations is also a necessity in order to control the consumption of energy and fossil fuels, but you could write a whole other paper on if they could implement those laws and what human rights that interferes with.

Over the last 100 years the global temperatures have been increasing slowly but steadily. Since 1980 the temperature has risen 0. 2 degrees C (0. 4 degrees F) each decade. “ Scientists predict that if we continue putting the same amount of gas into the atmosphere by the year 2030 the temperature will be rising as much as 0. 5 degrees C (0. 9 degrees F) or more per decade. Over all the global temperature could rise

There are steps being taken at this moment to reduce the gases put into the air but it still isn't enough.

We need to cut back more by taking a few easy steps.

Plant a tree, or take a bus to work instead of driving

your own car. Those things may not seem like a lot,

but if more and more people do it, it will make a

difference.” Through the eyes of most scientists,

global warming is seen as a very serious and severe

threat.

Then what is the future of avoiding the problem. Will

the Ozone Layer Recover? Scientists feel the ozone

layer should recover, if ozone -depleting substances

are eliminated. Under the Montreal Protocol, an

international agreement to protect the ozone layer,

action has been taken to reduce ozone-depleting

substances. The build-up of the most significant CFC's

in the lower atmosphere has slowed considerably, and

one of the key chemicals, CFC-11, is now decreasing.

Because of the time it takes for these chemicals to

move from ground level to the stratosphere, the impact

of the Montreal Protocol will now be felt for many

years. It is estimated that the ozone layer should

recover by about 2050- providing that all human -made

ozone depleting substances are eliminated. However,

long term predictions in the case of the ozone layer

depletion are uncertain because the processes of ozone

depletion are not all understood. As well, global

warming and the exhaust from high-flying aircraft may

significantly affect the recovery of the ozone layer.

Now, since it is a big problem that today's world has

to face such harsh problems due to the ozone layer

depletion, there must be a definite way to control the

layer. Nobody is going in the sky and fix it up as

there is no such technique developed till now. But the

ways are to prevent it. Human consciousness performs the major intervention in controlling of the ozone layer depletion. There are many things which a human being can do voluntarily for controlling the ozone layer depletion.

One Such way is Car Air Conditioner Tips. People must Go only to service facilities with EPA-certified technicians and Ask if refrigerants from their vehicle will be recovered and recycled during servicing . The emphasis is on carrying out the Repair in all leaks in the a/c system (not required by federal law, but helpful in protecting the ozone layer). About 80 million cars on the road today use CFC refrigerants in their air-conditioning (AC) systems. If leaky systems were repaired, it would prevent the release of about 30 million pounds of CFCs this year. Also, it is important to Ask about converting their cars to a

substitute refrigerant if the a/c system needs major repair. The used refrigerant can be recycled and reused. Asking their local government or waste hauler if the refrigerant will be removed before the appliance is discarded. Concept of saving natural resources should be developed. And each individual should perform his goodwill duty towards the environment on the way of controlling the pollution and thereby saving himself and world from its adverse effects.

Basically, the solutions are of three types, technological approaches, political approaches, and economic approaches. “ The technological suggestions are as follows: One suggestion has been to release simple hydrocarbons such as ethane or propane into the atmosphere. These compounds are known to react with the chlorine atoms from the CFCs that initiates ozone

depletion. Compounds like hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) have been brought into use. The advantage of HCFCs and HFCs is that they tend to break down quickly in the atmosphere. Every one agrees that the best way to deal with this problem is prevention (political approach).”(Bernard, p. p. 329-453). In 1989 some governments agreed to strengthen the Montreal Protocol. The most significant decision by the industrialized nations was to phase out methyl bromide by the year 2010. The Environmental protection Agency announced a four-pronged programs in 1992 to as economic approach to reduce the release of CFCs, are restricted to produce the amount needed by the market. The second element involves a marketable permit system. Under this, each of the seven U. S. companies that are authorized to produce CFCs, are restricted to produce the amount needed by the market.

“ The second element involves implementing Excise Tax on the sale of CFCs. The third element focuses on the guaranteeing use of the safe alternatives. The fourth element focuses on the recycling and reusing the ozone depleting chemicals. Regulations have been established that require companies to re-use ozone depleting materials rather than release them into the atmosphere. For example, refrigerant used in the outdated refrigeration system must be removed and then reused in newly manufactured equipment. “(Cogan, Introduction).

Many other steps can be taken individually, at a national level as well as at an international level.

To make the control of the ozone layer depletion.

Together, the individuals can make a difference. There are many Climate Smart tips to protect the Earth. In the home, the individuals can cut their utility bills

by purchasing energy efficient appliances, fixtures, and other home equipment and products. The average house is responsible for more air pollution and carbon dioxide emissions than is the average car. The Energy consumption can be reduced by up to 40 percent by purchasing home products that display the ENERGY STAR label. Look for the label on refrigerators, washing machines, dishwashers, heating and cooling equipment, televisions, VCR's, and audio equipment. Insulating the home and tuning up the furnace. Low-flow faucets in the showers and sinks should be used. The temperature of the hot water tank should be lowered to 120 degrees. The water -heater and all the water pipes should be insulated. The persons living in the areas having the sunny climate should install solar heating system to provide hot water. There are many areas of life where a person can take smart actions that will

save money while helping the environment. Some are the things that can be done inside the home, others outside in the yard, on the roads and even considering major investments. In fact, there are things a person can do anywhere and everywhere. In many ways a person can help reduce carbon dioxide pollution and improve the environment.

Climate Change is a global problem requiring action from the entire international community. Countries from around the world are working together to share technologies, experience, resources and talent to lower net greenhouse gas emissions and reduce the threat of global climate change. The United States participates in and supports several international efforts designed to help countries to address climate change. One important strategy for reducing global greenhouse gas emissions is developing and sharing

climate-friendly technologies, commonly referred to as Technology Corporation. These efforts can occur between nations, private entities, and organizations around the world. The United States participates in various bilateral and multilateral technology cooperation initiatives that aim to encourage the use of technologies that will reduce greenhouse gases. As countries continue to grow and develop, international cooperation will become increasingly important as the global community searches for ways to meet the climate change challenge efficiently and effectively. The key to successful cooperation is finding the activities that will help all countries achieve their economic, environmental, and the developmental goals in a climate-friendly manner in that.

Today, action is occurring at every level to reduce, to avoid, and to better understand the risks that are

associated with global warming. On a national level, the U. S. Global Change Research Program (USGCRP) coordinates the world's most extensive research effort on global warming. In addition, the Clinton Administration is actively helping to address the challenge of global warming while, at the same time, strengthening the economy. Many steps can be taken to reduce global warming. A person can himself forge ahead the world to some extent in the ozone layer depletion by Insulating their home, tuning up their furnace, and installing efficient showerheads. Next to leave their car at home two days a week. Next to recycle their entire home Ms Newsprint, cardboard, glass, and metal. Installing a solar thermal system to help provide their hot water can also do it. Then when they replace the washing machine, the emphasis should be laid on buying a low-energy, low water use model.

It's also important to buy food and other products with reusable or recyclable packaging. Then, When the refrigerator is replaced, the emphasis should be laid to buy the high-efficiency model. To put energy-saving lightbulbs in the three most used lights in their house. Also the important thing is to plant more trees and thereby responding the nature with an overwhelming output.

Finally the question arises that, have all these steps towards the solution shown any results? The answer would be in affirmative. . On a global level, countries around the world have expressed a firm commitment to strengthening international responses to the risks of climate change." The U. S. is working to strengthen international action and broaden the participation from people around the world.

Communities around the world can help by trying not to

emit such harmful gases into our atmosphere. The experts credited a 1987 protocol signed in Montreal, where governments agreed to limit the use of harmful chemicals. Alternative refrigerants, parts, and new equipment are available now for all CFC air conditioning and refrigeration equipment. As a result of worldwide efforts to protect the ozone layer, EPA experts 295 million fewer cases world wide of non-melanoma skin cancer over the next century.

“(Global Warming, Journal)”

The effects are devastating. It is ten years since the scientists and the nations have been working towards the solutions of this problem. The number of signatories in the Montreal Protocol has increased from 24 to 163 countries. Some western countries have already reduced the release of these substances by half, while other countries like China and Brazil are

trying to follow suit. Unfortunately, it reckoned that

the illegal trade in one of the compounds, CFC's

“(Global Warming, Journal). We can not wait for

another fifteen years to clean it up. Clearly, the

time to act to reduce global warming pollution is now.

Reducing global warming pollution is important to

reverse the increasing global trend. If no cuts are

made today, and global warming pollution is allowed to

continue, the world could suffer sudden and

devastating climate shifts. Thus, it could be only by

human intervention, that such major problem could be

prevented. Prevention is better than cure. What

differences can one make? When faced with this

question, individuals should recognize that

collectively they could make a difference. Think back

to the days before recycling became popular- when

everyone threw everything out in the trash. In less

than 20 years, most households have gone from recycling little to nothing to recycling newspapers, plastics, glass and metal. Many businesses recycle paper and buy recycled products and many industries practice source reduction in their packaging efforts.

An entire mindset has changed in one generation.

Taking action on global warming is similar. In some cases, it only takes a little change in lifestyle and behavior to make some big changes in greenhouse gas reductions. For other type of actions, the changes are more significant. “Individuals can make a Difference” identifies actions that many households can take that reduce greenhouse gas emissions in addition to other benefits, including saving you money. The actions range from changes in the house, in the yard, in the car, and in the store. Everyone’s contribution counts and its very important to save the environment. Thus,

every individual thinking the nature to be their own affecting basis, develop a strategy to work the most out of it in reducing pollution to the maximum strategy possible and also implement strategies that governs the controlling of the ozone layer depletion .

It would only lead by common's big efforts that would control the hazardous side- substances causing the ozone layer depletion and thereby improve the nature and thereby human life, which would ultimately lead to their benefit. Which means the prosperity for the living species in the nature.

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