Research Paper CHEMISTRY

Impact of Green House Effect on Climate Change

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ABSTRACT

The greenhouse effect is a natural phenomenon. Approximately 70 percent of the sunlight falling on earth is absorbed and re-radiated as longer length, infra-red energy (ie, heat). Water vapour and atmospheric gases, including trace gases such as carbon dioxide, absorb some of the outgoing infra-red radiation, warming the air. This 'greenhouse effect' rises the temperature of earth to an average of around 1.5 degree Celsius. This increase in global temperature is known as global warming. This change in the environment climate disturbs the equilibrium of the ecosystem that need to be addressed with appropriate measures. IPCC an international organization is playing its pivot role in maintaining the equilibrium global warming and climate change.

KEYWORDS : GREENHOUSE EFFECT, GLOBAL WARMING, CLIMATE CHANGE AND IPCC

INTRODUCTION

Greenhouse gases and climate change are important environmental concerns worldwide.

The level of carbon dioxide and other greenhouse gases in the atmosphere is rising, which is considered to be one of the world's greatest environmental threats. Carbon dioxide play important role in enhancing Green house effect. It accounts half of the enhanced green house effect. CO2 is the primary greenhouse gas emitted through human activity, however there are other greenhouse gases, some more 'potent' such as methane and others present in greater volumes, such as water vapour. Greenhouse gases weaken or destroy the ozone layer, causing a hole. The distinction needs to be made between the processes of the ozone layer and its protection of the Earth from ultraviolet rays, as opposed to the greenhouse effect which helps to warm the Earth (Carson et. al 2014).

GREENHOUSE EFFECT

The warming of the atmosphere due to the increased amounts of greenhouse gases such as carbon dioxide and nitrous oxides. These gases form a blanket over the Earth, trapping the energy or heat and preventing it from leaving the atmosphere. The atmosphere acts like a greenhouse. Green houses gases constitute, Carbon dioxide: Although this gas is a normal part of atmosphere, it is thought to be responsible for 55-60% of the global warming trend. This is the gas we expel when we breathe and that green plants need for photosynthesis. Fossil fuels: Coal, oil, and natural gas. Deforestation: The removal of large areas of trees or forests by cutting or burning. Chlorofluorocarbons: Compounds thought to be responsible for 25% of the global warming trend. Chlorofluorocarbons (CFCs) are used in air conditioners and refrigerators, as well as in making plastic foams, and in aerosol propellants. Methane: This gas is thought to be responsible for approximately 12% of the global warming trend. It is produced by bacterial decay of organic matter and in the stomachs of cattle, sheep, termites, and other organisms. Some also comes from industry and other man-made sources. Nitrous oxide: Gas that is responsible for about 6% of the global warming trend. It is produced by the microbial breakdown of nitrogen fertilizers and livestock wastes, from volcanic eruptions, and from industrial processes. However, with the burning of fossil fuels since the industrial revolution, the atmospheric concentration of these greenhouse gases has increased. This alters the radiation balance so that more long wave radiation is being absorbed in the lower atmosphere, and some of this is being re-emitted back to the earth's surface. This is known as the 'enhanced greenhouse effect'(NSW EPA 2000).

GLOBAL WARMING AND CLIMATE CHANGE

The increase in average global temperatures over the past century is known as global warming. Global warming then causes climate change, due to the consequences of the increased temperatures on the local weather, which affects the environment and local flora and fauna. There are many consequences of climate change and these vary according to the country and environment in which you live. Scientists predict that in the south of Western Australia (which includes Perth) there will be a hotter drier climate, with reduced rainfall leading to a reduction in water supply.

ROLE OF INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

The leading international organization scientifically investigating global warming and climate change is known as the Intergovernmental Panel on Climate Change (IPCC). The IPCC regularly produces reports based on their review of all published data surrounding climate change. Each report involves gathering results from thousands of scientists from all over the world and is reviewed by hundreds more. They predict that at current rates of greenhouse gas emissions, the global temperature could increase by between 1.8°C and 3.4°C by 2100 (IPCC 2013). They also provides the appropriates measures that need to be implemented to counter global warming and the climate change due to green house effect.

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