



# Ecology, Environment and Human Being



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Submission: July 27, 2020; Published: September 30, 2020

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### Abstract

In this short article, I have tried to establish a strong relation between ecology, environment, and human being life. Further, how are we responsible to break a relation between ecology, environment, and human being by improper use of fossil fuel available beneath ground?

**Keywords:** Energy; Ecology; Environment

## Introduction

We know that Earth is moving around Sun in elliptical path. Further Earth also rotates along its axis. Since, the observers (human being) are located on the earth and hence the observers feel that the Sun is moving around Earth (us) and hence day and night is observed. The Earth consists of tectonic plates. Tectonic plates are pieces of Earth's crust and uppermost mantle. The tectonic plates are around 100 km thick and it consists of two principal types of material: oceanic crust (3/4 of earth) and continental crust (1/4 of earth). It is believed that the ocean crust and continental crust was in the form of ice and desert land. The tectonic plates were supposed to be broken and moving with respect to each other's and between two plates there is crack for escaping of the various natural gases (Methane, carbon dioxide, nitrogen, hydrogen sulfide, ozone, or helium,) available beneath the earth. These gases being light weight moved towards Sun and became stagnate between Sun and Earth. These gases from a layer between Sun and Earth and it may be due to gravitational forces. Solar scientists probably refer this layer of gases as an Atmosphere for its own purposes.

The Sun, a perfect sphere of hot plasma, is located at the center of the Solar System. The Sun is source of all renewable energy directly and on-renewable energy (fossil fuel) indirectly. It is responsible for all living organism on the planet earth including human being. The diameter and the mass of Sun are 109 and 330,000 times higher than that of Earth. It accounts for about 99.86% of the total mass of the Solar System It consists of about 73% and 25% hydrogen and helium respectively and the rest is heavy gases namely oxygen, carbon, neon, and iron etc.

The energy from the Sun in the form of heat (electromagnetic waves) and light (photons) energy comes from a nuclear fusion reaction at temperature of about  $1.5 \times 10^7$  K (15 million Kelvin) which that is happening inside the core of the Sun. The 90% of this energy is generated at core of SUN. During nuclear fusion at high pressure and temperature in the sun's core cause nuclei of Hydrogen to separate to form one helium atom which mass is less than two Hydrogen molecules. The remaining mass is converted into energy as  $E=mc^2$  (Einstein's theory). The Sun acts as a black body at temperature of about 6000 K and it radiates energy in the form of electromagnetic (e/m) waves ranging wavelength of 0 to  $\infty$   $\mu\text{m}$ , known as Solar Energy, Tiwari [1].

Atmosphere which consists of natural gases has very unique two properties namely

- It transmits only short wavelength radiation coming from Sun between 0.3  $\mu\text{m}$  to 3  $\mu\text{m}$  and
- It behaves as an opaque for the rest of radiation having wavelength either below 0.3  $\mu\text{m}$  and above 3  $\mu\text{m}$

Some time, atmosphere is also referred as filter of required solar radiation coming from Sun for living organism. The regions between the Sun and the Atmosphere and between the Atmosphere and the planet Earth are referred as extra-terrestrial and terrestrial region, respectively.

## Global Greenhouse Effect

There is strong relation between the Sun, the Atmosphere, and the planet earth for survival of all living organism on the

planet earth. For example, the short wavelength radiation coming from the Sun after transmission from atmosphere reaches the earth. The earth absorbed a part of short wavelength radiation after reflection from the earth and earth' temperature increases and then earth emits long wavelength radiation due to Wien's displacement law ( $\lambda T = 3000 \mu\text{m.K}$ ). This long wavelength radiation (thermal energy) emitted from the earth is blocked by atmosphere due to its second property as mentioned above. Hence, the air in terrestrial region is heated fast due to its low heat capacity and the temperature of air rises. Now, if the temperature above ice of oceanic continent rises, the ice starts melting and formed the water which is in steady state. Now, we also consider the radiation coming from Sun in the form of photon ( $E = hv$ ) contains energy much higher than the binding energy of  $\text{H}_2\text{O}$ . If the photon strikes  $\text{H}_2\text{O}$  then Hydrogen ( $\text{H}_2$ ) and Oxygen ( $\text{O}_2$ ) is separated. After that Oxygen ( $\text{O}_2$ ) is released to atmosphere to clean environment which is the basic need of human being for survival. Further, the Hydrogen ( $\text{H}_2$ ) reacts with carbon-dioxide ( $\text{CO}_2$ ) of environment to make it hydro-carbon (mass) in the form of algae (biomass). So, the algae is the first living organism taken birth on the planet earth. This reduces the level of carbon-dioxide ( $\text{CO}_2$ ) in atmosphere. This also helps to clean environment. Since the color of algae is green and atmosphere and earth under consideration acts as roof and floor hence this phenomenon is known as global Green House Effect. From algae formation to human being, it might have taken many million years. It is a history.

### Ecological Balance

Ecology, a branch of biology, is considered to have interactions among all living organisms including human being and their

biophysical environment. Till world war (WW) I and II, there are eco-balance between biophysical environment and human being (one of living organism. Broadly, to maintain clean environment, one must have at least about 30% forestation. However, we, all human being, are responsible to disturb eco-system to full fill our greed through fast growth of industrialization and population after world war-II.

### Recommendations

Based on our experience in past to maintain eco-system for our good health, one must have the following:

- We must maintain eco-system by having plantation on regular basis in large number every year
- We should be encouraging to use maximum renewable energy particularly Solar energy in the form of thermal and electrical energy, Tiwari [2].

### Acknowledgement

I am thanking to my Guru ji Padama Shri Prof. Mahendra Singh Sodha, FNA who introduced me about solar radiation and its importance in future long time back in the year 1977. I have also consulted Sun – Wikipedia to prepare the present documents.

### References

- GN Tiwari (2002) Solar Energy: Fundamentals, Design, Modelling and Applications, CRC Press (USA) and Alpha Science International (UK) also published by Narosa Publishing House, New Delhi.
- GN Tiwari, Arvind Tiwari, Shyam (2016) Handbook of Solar Energy, Springer.



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DOI: [10.19080/ECO.A.2020.01.555565](https://doi.org/10.19080/ECO.A.2020.01.555565)

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