

Global Warming, Reasons, Consequences and Protocols

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ABSTRACT

Mean temperature of Earth has changed during some decade ago. After conducting so many researches, the scientists found raising volume and density of greenhouse gases in the Earthatmosphere. In fact, mentioned emissions of greenhouse gases is resulting in different activities of thehuman, particularly using fossil fuel and deforestation. Although increasing temperature of Earth has reached dangerous stage, it unfortunately seems that the human doesn't apprehend the depth of calamity and doesn't act serious measure to save it. The effects of Global warming phenomenon is including physical, economicallogical, social, economic ones, while the continuation of trend of Global warming makes a disastrous and tragic life on this planet. Just as, these days, serious indications of Global warming are easily observable. Among most important protocols challenging whit mentioned phenomenon, it can be pointed out by changing the structure of consuming energies (from fossil energies to pure ones), reducing consumption of different energies, especially fossil ones, preservation, expanding vegetables, the verdant fields, culture-creation and necessary propagation in this field.

INTRODUCTION

In some decades ago, mean temperature of Earth increases than past. It's a phenomenon that is commemorated as Global warming. This event has different consequences and effects on Earthand its residents. One of most dangerous impact is to change Earth's climate. The information shows that modern human who doesn't take seriously this event and in case this inattention is keeping on, supposing stability of these conditions, impacts and negative effects of this event will bring up such irretrievable result, in the form that the Earth residents involve in disastrous conditions.

Antoine Becquel discovered the possibility of generating an electric current under the action of light in 1893. Since then, the electricity produced by the photovoltaic technology was assertedfrom an economically point of view and not only.

Worldwide sales of photovoltaic systems reached in 1998 at 150 MW, after a decade in which

They have increased by 15-20% per year, (Motoc, 2009).

In continuation of discussion, after introducing Global warming phenomenon, its factors its effects are addressed and at the end, protocols of challenging mentioned event have been discussed.

Aeolian energy is a renewable source of energy generated by wind power. At the end of 2006, the global capacity of wind generators was of 73,904 MW, these producing a little more than 1

Percent of the world electricity needs. Although considered a relatively minor source of

Electricity for most countries, Aeolian energy production has increased almost five times between 1999 and 2006, reaching a point that, in some countries, the share of wind energy in the total ofenergy consumption is significant: Denmark (23%), Spain (8%), and Germany (6%). (Bucharest:Dobrescu, 2009).

Global warming: (definition-dimension)

The phenomenon of Global warming is consisting increasing mean temperature of Earth than past although Earth has become warm and cold many times, its reason is natural process, whereas last decade, this Global warming is not due to natural defined processes. Nearly, one third of solar energy which is flowing toward the Earth, reflect into space and it is why natural defects like water width iceboxes in a Global warming form and other surface are glittering. But rest two third of energy is absorbed by the Earthand lead to warm the lands, seas, oceans as well as Earthatmosphere. The reason of absorption of solar heat is to existing present gases in the Earthatmosphereand it is called greenhouse gases effect. It means that 98% Earthatmosphere are consisting nitrogen, oxygen and argon and making greenhouse gases impact resulting from these gases rises mean

temperature of Earth by 150C above zero is an appropriate for living at the Earth. By losing existing defined greenhouse gases, impact mean temperature will reach 180C and under this circumstances it is never possible to survive under the sea water and it won't be a suitable temperature for living in the Earth. Approximately half of all energy reaches on the side of the sun which is consisting infrared beam, nitrogen, oxygen and Argon gases that are not able to absorb very high infrared beams.

Following the Industrial Revolution, level of welfare and life quality of the people have been developed day by day. This development has brought the high level of need for the energy and raw materials in the 20th century. Fossil fuels for the heating, transportation and energy production utilities have been essential reasons for the environmental problems (Sevim, 2009).

In other words, mentioned gases are weak greenhouse gases. Therefore, they are not just factor of Global warming phenomenon. As a result, emission of gases like CO₂, methane, NO, CFC in the atmosphere is resulting from the human activities and particularly using fossil fuels are main factors of Global warming, because existing gases are powerful greenhouse gases.

The climate change has been occurring along with the world history (Çepel, 2008).

And then it reduced and reached mean temperature 140C. Changes in the volume of present CO₂ in the atmosphere of Earth effect on Earth thermal system. In the year 1960 A.D (Nearly 50 years ago) The CO₂ density at Earth atmosphere was equal to 313 parts and in the year 2006 it reached 373 ones. But this partial elevation has resulted in major changes of Earth climate temperature.

Main factors of Global warming

The scientists have spent a lot of times to find a response for this question that what's the main reason of increasing Earth temperature and have found it on emitting greenhouse gases in Earth atmosphere due to human and natural gas plays an effective role. All human activities are followed by consuming oxygen and producing CO₂. Simplest process is human breathe.

Nevertheless, the systematic meteorological measurements have been performed only for a limited period of time. In this case, it is not possible to explain the climate changes emerging in the thousands of years with the measurement values belong to the limited years, (Çepel, 2008).

Also consuming 1 liter fuel by vehicles, almost 15kg air is burnt and dangerous greenhouse gases emit to the atmosphere. On the other hand, different industrial processes lead to emit other greenhouse gases. By the way, in order to the fact that vegetation's, especially the forest have impressive role to absorb CO₂ and producing oxygen, destroying this vegetable field, so the forests throughout the world and in developing countries lead to increase Earth temperature. Because all live vegetation's save carbon in their photo synthesis and when they die on fall to decay, saving carbon in their body returns to Earth atmosphere. Thus, destruction of the forests and other vegetation result in natural chain of carbon suffering indisposition. Another factor that interferes to Global warming phenomenon is to use extensively chemical fertilizers in agriculture relating to chemical fertilizer which act as most effective element, using nitrogenous crops' chemical fertilizer, in agriculture activities for increasing the crops, the nitrogen existing in Earth atmosphere is highly coming up. Recent report of FAO organization recites that modern farming has higher corporation against transportation to increase Earth temperature.

While scientists were developing different scientific methods, they tried to acquire historical data about the subject. The earth and animal and plant fossils were investigated by the radiocarbon, pollen analysis, and the ring chronology methods. Several results have been attained about the climate changes (Çepel, 2008).

However, a part of this corporation is due to fossil fuels in mechanized agriculture greater part of mentioned corporation is due to emitting greenhouse gases of methane and NO to Earth atmosphere is due to human farming activities. The issue that should be highly addressed is that greenhouse gases mentioned have different density in Earth atmosphere and various capabilities to increase Earth temperature.

Besides, among the signs of the global climate changes, we may include the decrease in the climate migrations and in the rare bird species (Samur, 2007).

For example, the greenhouse gas of methane is more than CO₂. As a result it leads to warm 100 times stronger. While this issue becomes clearer that CO₂ density is 385 parts by million in that atmosphere, as this figure is 1.8 by million for methane gas.

Basic origin of emitted methane gas in the atmosphere consists of biochemical process in rice paddies and animal digestive system, leaking natural gas from oil and gas wells. Methane gas is formed as a part of greenhouse gases melting big parts of ices including methane in the pole as well as CFC and HFC are used in cooling system (also have main role to destroy ozone layer) acts 1000 times stronger than CO₂ to increase Earth temperature. One fundamental point that has to be considered is greenhouse gases pointed out that are concentrated in lower layers of Earth atmosphere than CO₂. No one lead to warm Earth.

These rapid increases in the condition of these gases in the atmosphere due mainly to human activity, particularly the burning of fossil fuel and deforestation, have been affecting the surface climate of the earth. This alteration is achieved through altering the radiation balance of the earth, warming the surface and affecting atmospheric circulation. It is this global warming of climate, the enhanced greenhouse effect that has become the subject of concern at global, national and local level (Carter et al., 1994).

For lighting up the effect of pointed out gases to increase Earth temperature, related scientists calculated the effect of gases based on the value of CO₂ gas. Therefore, until year 1990 A.D, 6 billion tones CO₂ are annually emitted to Earth atmosphere and this figure is being increasing 20% per year. Based on present reports, during the 20th century A.D, mean Earth temperature raises nearly 1740C. While it is happens, it will originate disastrous impacts beyond our mind.

Typically, SW materials in GCC states have been produced through many steps, starting with extraction and processing of raw materials; manufacture or processing of products; transportation of materials and products to markets or agents; and finally, use and disposal by consumers (AL Ansari M., 2008).

Consequences of Global warming

In continuation to Global warming, highly negative consequences will be generated for this planet's residents. In other words, if the trend of Global warming is being keeping on and the human doesn't think seriously and makes a preventive action, the very painful and tragic future will be waiting for the human. In this section, it is sought that most important events are pointed out. In one general categorization, the effects of Global warming are divided into three parts:

A-physical effects

B-economicallogical effects

C-economic and social effects

Most important physical effects of Global warming are including coming up seas and ocean level and jeopardizing the life of coast's residents, e.g. until two or three decades coming whole Maldives country will go under water. From other physical effects of increasing Earth temperature those can be expressed as follows: distributing climate and as a result expanding droughts and other events like floods, heavy storms and Tsunami also acidizing the oceans' water and decreasing ocean's oxygen. Move over, increasing evaporation rate, with drawing natural ices, not only in both north and South Pole, but also in mountains such as Alpine and Himalaya and Volcanic events and Earth quacks and disturbances in the circle of absorbing carbon are other physical effects of the Global warming phenomenon.

Avoidance plans and legislation also typically include the establishment of waste reduction/avoidance targets, economic incentives, and educational efforts, including promotion, technical assistance, planning, and reporting.

Because of this broad focus, this method offers the opportunity to reduce GHG emissions in a significant way.

For many materials, reduction in energy-related CO₂ emissions from the raw material acquisition and manufacturing process, and the absence of emissions from waste management, combine to reduce GHG emissions more than that using other options (Smith, 2001).

B-Economicallogical effects

Economicallogical effects of Global warming are definitively pointed out by the effect on animal and vegetable environment of Earth. About the vegetable life, the role of draughts to destroy vegetation's can be a proper sample, also destroying coral masses in the seas and ocean (which has negative effect on life balance of other aqueous creatures) are other economicallogical consequences of warming Earth. Regarding to animal life, it should be addressed that climate change resulting from increasing Earth temperature, generation is on the threshold of extinction. From predominant evidence of this issue, it can be expressed on the annihilation of polar bear, some birds and bees.

Current rates of resource consumption and pollution are unsustainable because they exceed the rates at which resources can be regenerated and wastes can be assimilated by Earth's natural systems. In order to increase sustainability, we will need to develop a more sophisticated understanding of the complex interactions between different environmental impacts, and develop radical new systems that lead to significant, and immediate, changes. In particular, it will be important to improve eco-efficiency, eliminate waste generation, and shift from products to services (Grant, et al., 2003).

Actually, highest economicallogical effects of Global warming is on vegetable and animal life that disturbs natural balance of related environment in some areas such as polar region and south plain of north pole. Elevating the volume of toxic greenhouse gases such as CO₂ and ND and SO₂ due to industrial activities and cars' fuel in

Earth atmosphere leads to fall acidic rains. Acidic rain result in polluting Earth surface, waters and death of aqueous creatures and acidizing soil.

Economical-Social effect

It will be obvious by partial thought increasing Earth temperature has disastrous economical-social effects in addition to impressive physical and economical ones. One of parts which under goes highest negative effect on Global warming phenomenon is agriculture section. Because it leads to change the climate and this case makes the serious problems for the times of precipitation in different areas of farming. Consequently, in all areas around the world occurring such an event and starvation is inevitable. Decreasing supplying drinkable water, occurring strong storm and floods is other parts of mentioned consequences.

Only until 70 years later, more than 40 million people living in the Earth will become homeless resulting from the effects of elevating the temperature of Earth. As it is pointed out above, if Global warming is keeping on, Maldives country will be eliminated and go under sea. Other economical sections, namely industry and services will not be safe from tragic effects of Global warming. Increasing social and healthcare costs are several negative effects.

Falling acidic rains due to concentrate toxic gases jeopardize human health. From these dangers, skin cancer and other skin diseases can be addressed.

High volume of traffic in the cities leads to increase temperature of cities more than other areas. At present, this high temperature plus NO and SO2 leads to make a biochemical dust in the cities that is dangerous for human health. For example, in the year 1955 A.D in California phenomenon leads to die 400 ones from Los Angeles in California State in USA. It is necessary to mention that more than 90% greenhouse gases emitted in this country are resulting from burning fossil fuels.

The strategies challenging (modulating) temperature elevation of the Earth

Generally speaking, reducing Global warming is outlined by the measures that lead to emit greenhouse gases on Earth atmosphere. Definitely, these strategies are including:

A- Changing the structure of consumption energy in industries, cars and other activities. For this case, using clean energies like solar, wind, water and Earth energies will be extended in the form of thermal and nuclear.

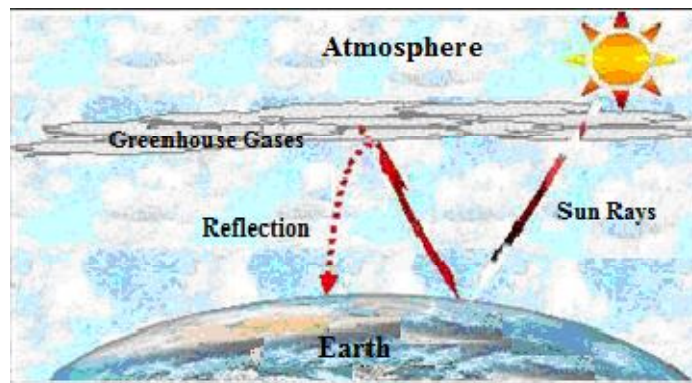
B- Using natural gas instead of coal and oil products.

C- Using the instrument of carbon. Credit three aims for applying this instrument is to pay a sum which omits certain value of CO2 from environment and is measured based on (equal ton of CO2). This instrument more than acceptability among the public is a motivation for agents and manufacturing companies to change their technologies in the way that emit lower CO2 to the environment.

D- Decreasing the consumption and recycling the goods (whit a level is possible). It's estimated that observing this case by everyone leads to reduce annual emission of 1200 kg CO2 to Earth atmosphere.

E- Reducing consumption of various energies through walls' insulation and windows and doors' sealing of the buildings. This measure leads to decrease the temperature by 20C for building; it results averagely in reducing almost 1 ton CO2 per year/ building.

F- Using low-consumption lamps instead of ordinary one. This action has considerable effect on reducing energy consumption and as a result falling emitting CO2 gas into Earth atmosphere, e.g. it has been estimated that mentioned measures from American households lead to eliminate almost 35 million ton of greenhouse gases per year and it is effect is equal to omit 75 million cars from urban traffic chain and roads' cars.



Source: http://www.tema.org.tr/Sayfalar/CevreKutuphanesi/Pdf/KureselIsinma/EM_Konu12.pdf

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