Is the global warming real?

Environment, Global Warming

Global warminghas becoming an increasingly important issue in our environmentally conscious society as it is a problem affecting every aspect of theenvironmentand the living beings everywhere on this planet. Yet, it is quite controversial as to its nature, cause, and the effects it will bring along in the future. The average temperature of the earth’s surface has risen by 0. 8 degree Celsius since 1880.

The International Panel onClimate Change(the IPCC), based on the work of hundreds of scientists in more than 100 countries, has concluded in its 2007 report that this current planetary warming is mainly caused by human activities, such as the burning of fossil fuels, deforestation, and agriculture. (The IPCC 2007 Synthesis Report) These activities have greatly increased atmospheric concentration of greenhouse gases, especially carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O).

These greenhouse gases are naturally occurred and essential for life on earth as they trap the sun’s heat and keep the earth warm. If these gases were removed from the atmosphere, the earth’s temperature would plummet to -18 Celsius, far too cold to sustain our current ecosystem. However, humans are causing massive increase in these greenhouse gas emissions, enhancing their heat- trapping ability. As a result, the temperature is rising higher and higher. Pidwimy, 2006) Scientists have also found that CO2 is the most important greenhouse gas which is responsible for 55% of the current warming. The atmospheric concentration of CO2 increased from 280 parts per million (ppm) in 1750 to 379 ppm in 2005. The principal reason for this mounting CO2 levels is the use of fossil fuels and changes in land use: the burning of oil, gasoline, and coal for running cars,

factories, and generating electricity, and the cutting down of forests to make way for farming, housing and other development.

Emissions from fossil fuel combustion contribute about 65% of the additional CO2 added to the atmosphere. (Pidwimy, 2006) The world’s biggest fossil fuel consumers are the United States, China, and the European Union. (Damassa, 2006) Deforestation contributes 25% the CO2 emissions. Sir Nicholas Stern says the destruction of the rainforests of the Amazon, the Congo basin and Indonesia will in the next four years alone add more CO2 into the atmosphere than every flight in the history of aviation to at least 2025.

According to the audited figures from 2003, deforestation is releasing two billion tons of CO2 into the atmosphere every year. (Howden, 2007) If these activities continue, the atmospheric CO2 concentration will be double the pre-industrial levels during this century that will raise the global temperatures by around 2? C to 5? C. (Pearce, 2008, P1) Chlorofluorocarbons are man-made greenhouse gases which accounts for 25% of the current warming. Chlorofluorocarbons have the strongest heat-trapping ability among all the greenhouse gases per molecule.

However, the atmospheric concentration of these gases is low so they are not as damaging to the climate as CO2. Many nations have reduced their production and use of these man-made chemicals in response to Reports of the development of ozone holes over the North and South Poles and the general decrease in global stratospheric ozone levels over the last 20 years, thus the concentration of these gases may soon begin to decline. (Pidwimy,

2006) Other two important contributors to global warming are methane and nitrous oxide.

Comparing figures from 2005 with pre-industrialised levels (measurements taken in 1750), methane increased from around 715 parts per billion (ppb) to 1774 ppb and nitrous oxide increased from 270 ppb to 319 ppb. (The IPCC Synthesis Report 2007) the main sources for the extra methane now found in the atmosphere are agriculture (rice cultivation, grazing animals) and fossil fuel use (coal mining, and oil and gas extraction). Nitrous oxide is released into atmosphere from the loss of the forests, the cutting down forests for agricultural fields, and the use of fertilizers for plants growth. Pidwimy, 2006) The impacts of this man-made warming lie not only, or even primarily, in the temperature rise. It says in the IPCC Synthesis Report 2007, Discernible human influences extend beyond average temperature to other aspects of climate, including temperature extremes and wind patterns. Anthropogenic warming over the last three decades has likely had a discernible influence at the global scale on observed changes in many physical and biological systems.

There are many other effects that have occurred due to global warming, e. g. the melting of ice andsnowcover, rising global average sea level, increase in intensity and frequency of extreme weather events (heat weaves, heavy precipitation, tropical cyclone activity). (The IPCC Synthesis Report 2007) 41 Scientists are predicting that global warming will produce a lot of negative consequences. According to the IPCC, the global average temperature will rise 0. 2 per decade for the next two decades if the greenhouse gas missions

are at or above the current rate and this warming will cause further damage to the global climate system during the 21 century than those observed during the 20 century. (the IPCC 2007 Synthesis Report)

The sea level is expected to rise between 7 and 23 inches (18 to 59 centimetres) due to thermal expansion and melting ice on land by the end of this century. By 2080s, many millions more People than today in coastal areas, especially in heavily populated and low-lying mega deltas of Asia and Africa will be at great risk every year due to sea level rise. the IPCC 2007 Synthesis Report) it is estimated that there are more than 180 countries having populations in low-lying costal areas, 70% of which have urban areas of more than 5 million people that are at risk, including Tokyo; New York; Mumbai, India; Shanghai, China; Jakarta, Indonesia; and Dhaka, Bangladesh. (Wagner, 2007)126 Global warming will pose threats to people’shealth: More frequent and severe heat waves will cause more heat stroke and other heat-related illnesses and death.

The elderly and the young are the most susceptible to these effects; air pollutionworsened by global warming will lead to more respiratory and cardiovascular diseases, such as asthma and cardiac disarryhthmia; Thanks to global warming, malaria-carrying mosquitoes are spreading to cooler places too, where there has never been this disease before, such as South Korea and the highlands of Papua New Guinea; (Weiss, Pam, 2008) And a group of 12 diseases called Deadly Dozen have been found to spread due to the warming temperature, e. g. Avian ‘ Flu, Cholera, Plague, Ebola and Tuberculosis. (Simmons) Global warming will add significantly to the world’s

water shortage problem as it increases the severity of droughts, foods, and cyclone, all of which reducing the water supply and destroying the quality of water. Wong Poh Poh, a professor at the National University of Singapore, says that the U. N. Intergovernmental Panel on Climate Change has found that 2 billion people will not have access to adequate drinking water by 2050 and 1. 2 billion more people will be under the threat of severe water shortage by 2080. NG, 2008)86 Many of the world's species could be on the verge of extinction due to global warming. According to the IPCC 2007 report, that 20- 30 % of the world's species would become extinct if global average temperature rises additional 1. 5 to 2. 5? C (relative to 1980-1990) and 40-70% would be expected if the increase in temperature exceeds 3. 5? C. (the IPCC 2007 Synthesis Report) However, there are some scientists who are sceptical about this man-made global warming theory. According to these sceptics, Climate change is a natural process and is not caused by man.

The world has experienced warmer and colder periods in the past without any external cause so a minor rise (less than a degree) in global average temperature is normal. Explains Richard L. Lindzen, a professor of meteorology at the Massachusetts Institute ofTechnology, " the motions of the massive oceans where heat is moved between deep layers and the surface provides variability on time scales from years to centuries. Recent work …suggests that this variability is enough to account for all climate change since the 19 Century. "

Lindzen asserts that the warming in the tropics around an altitude of about 9 km should be 2. times greater than the surface warming but the measurements show that warming at these levels is only about ? of the surface warming. This means the greenhouse effect only contributes to about one third of the surface warming and not all of this really small warming is caused by man. (Lindzen, 2009) Global warming sceptics also argue that computer models which predict the future climate are not reliable. According to S. Fred Singer, an atmospheric physicist at George Mason University, these computer models can not calculate all the important parameters around the globe therefore are unable to predict the future climate.

Singer says, “ If you only calculate temperature, winds, and so on at intervals of 200 miles, then you cannot depict clouds, or even cloud systems, which are much smaller. So until the models have a good enough resolution to be capable of depicting clouds, it's very difficult to put much faith in them. ” Singer also claims that these models do not agree with each other in predicting the temperature rise for a doubling CO2 levels. Some predict a warming of 5 degrees Centigrade while others predict one degree.