The increased social debate, regarding complex issue, such as The Greenhouse Effect

and the Global Warming, has definitely increased our environmental awareness.

However, such debates are often **emotive** rather than informative in fact.

One can be forgiven, for instance, for believing that the Greenhouse Effect is something

which we should be trying to eradicate!

Short-wave radiation, in the form of visible ultra-violet (the UV) light from the Sun,

penetrates the Earth’s atmosphere to warm the surface of the planet.

Since all matter is warmer than space, it radiates heat, and part of the sun’s energy,

is radiated out by the Earth’s surface.

The Greenhouse gases in the air, trap some of this **infrared** radiation,

causing the Earth’s surface, and lower atmospheric layers to warm up

to a higher temperature, than would otherwise be the case.

Without these greenhouse gases, Earth would be a frozen**, hostile** environment

with an average global temperature, of about -15 Celsius degree to -19 Celsius degree,

where no life could ever be sustained.

A thermal balance of energy exists where the earth radiates

about the same amount of energy into space

as long-wave radiation that Earth aborts from the sun.

Our atmosphere allows the balance to be achieved, since trace gases trap and abort heat.

The other interactions are *at play*, that may impact on our Earth’s **albedo**, or balance of energy.

The amount or type of clouds cover, for example, can really alter,

the exchanged amount of the energy in fact.

**Cirrus** clouds reflect more of sun’s radiation, than absorb radiation from earth.

**Cumulus** clouds do the opposite, where proportion of energy retained,

is larger than that reflected.

The detected increase in carbon dioxide in our air, since the Industrial Revolution

will also affect the albedo. Not only has there been an increase in the CO2 identified.

Other greenhouse base gases such as methane, nitrous oxide, etc. have all increased.

It is thought that the latter of these minor greenhouse gases, may have a stronger impact

on a global warming than the carbon dioxide levels actually.

The largest contributing factor to the rise of greenhouse gases

have been the burning of fossil fuels. Carbon in the fuel that we burn

is oxidized and released into the air as Carbon Dioxide.

Compounding the problem, deforestation that has taken place over the last 50 -100 years

reduces the number of trees that are crucial to absorb carbon dioxide from atmosphere.

Short-term solutions for regional economic survival means the importance of rainforests

in this gas has been ignored. Even a **layman** can see how greenhouse effect

has *earned its bad reputation* indeed. An out-of-control Greenhouse Effect is often quoted

which uses the example of Venus, where heat is trapped by thick clouds and

a dense carbon dioxide atmospheric element, making the surface temperature

as high as 500 Celsius degree.

Scientists don’t always agree on their predictions. Whilst they agree that

an increase in Greenhouse gases will lead the Earth’s temperature to rise,

they so disagree on what may happen next. Some even believe the

subsequent increase in water vapor may help to reduce the temperature.

But other believe it will rise the temperature instead.

The collection of meteorological data from observation satellites and a study of samples

which were taken from glaciers and trees for instance, have supported

what many of planet Earth’s **inhabitants** notice for themselves. The globe is warming up.

It is generally agreed that by 2030/2040, the average global temperature

(currently +15 Celsius degree) will have risen by anything up to 5 Celsius degree,

causing polar **ice-caps** and mountain glaciers to melt and

changes to ocean currents and *circulation patterns*, causing *coastal waters* to rise.

New weather patterns and extremes are anticipated.

Scientists do not know if the increase in average global temperature is just a cycle

because of the absence of long-term meteorological data.

Comparing **climate epochs** is complex as so many atmospheric and surface features

of land and oceans are different. All of the elements that makes up climate

are continually changing and dynamically interacting. Knowing therefore,

that the Earth cooled during the past ice ages, and warmed, during interglacial periods,

has really limited worth in predictions for the future. Moreover, records of past climatic epochs

are not as reliable or detailed as those records developed in recent decades.

General Circulation Models (the GCMs) are designed to describe basic behavior patterns of air.

Used on super-computers, the system still can’t represent all nations, and so has to rely on

**spatial** representation of earth. This means that specific consequences of climate change

* like the predicting the daily weather for particular climate regions – are much more difficult

to predict than the global reality of the Greenhouse Effect.

Computers are much more accurate in showing these broader climatic conditions

and predicting ***global effects*** than more ***localized phenomena***.

Many experts conclude that failure to take action in order to limit the human activities impact

is taking a hazard risk, while there are others who argue that nature will save itself

from our apparent inability or disinterest in protecting the planet, and that adaption will,

once again, be the key to survive. As these debates continue and governments refuse to act,

it’s becoming more likely that we’ll be able to see for ourselves whether or not,

the **dire** predictions of the global warming are **overstated,** as early as the middle of this century.