

## The Paradox of Climate Science

The Earth's atmosphere is composed of a mix of gases and research reveals the following information.

From [http://en.wikipedia.org/wiki/Atmosphere\\_of\\_Earth](http://en.wikipedia.org/wiki/Atmosphere_of_Earth) quote the following:-

<b>"Gas</b>	<b>Volume</b>
<i>Nitrogen (N<sub>2</sub>)</i>	<i>780,840 ppmv (78.084%)</i>
<i>Oxygen (O<sub>2</sub>)</i>	<i>209,460 ppmv (20.946%)</i>
<i>Argon (Ar)</i>	<i>9,340 ppmv (0.9340%)</i>
<i>Carbon dioxide (CO<sub>2</sub>)</i>	<i>397 ppmv (0.0397%)</i>
<i>Neon (Ne)</i>	<i>18.18 ppmv (0.001818%)</i>
<i>Helium (He)</i>	<i>5.24 ppmv (0.000524%)</i>
<i>Methane (CH<sub>4</sub>)</i>	<i>1.79 ppmv (0.000179%)</i>

These figures are for a "dry" atmosphere which does not include Water Vapour (H<sub>2</sub>O) at ~0.25% by mass over full atmosphere, locally 0.001%–5% by volume.

Climate science says that Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) are not "greenhouse gases". "Greenhouse gases" absorb infra-red radiation (i.e. - 99% of the atmosphere – N<sub>2</sub> and O<sub>2</sub>) and the principal "greenhouse gases" in the atmosphere are Water Vapour (H<sub>2</sub>O) and Carbon dioxide (CO<sub>2</sub>).

The theory says:

1. The Sun heats the Earth and this is a "constant" varying little over time; and,
2. The only mechanism whereby the Earth in the vacuum of space can lose energy – which equates to "cooling" - is by radiating infra-red radiation to space.
3. The power of this radiation has been measured by satellites and is of the value of about 239 Watts per square metre (W/m<sup>2</sup>).
4. 239 Watts per square metre (W/m<sup>2</sup>) is the radiation emitted by an object at a temperature of about minus 18 degrees C.

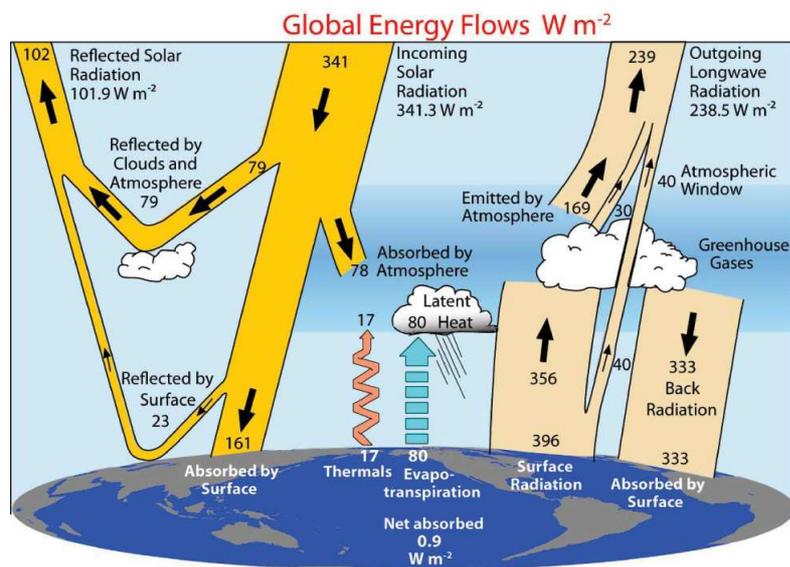
This is of course the source of the famous quote:-

[http://www.giss.nasa.gov/research/briefs/ma\\_01/](http://www.giss.nasa.gov/research/briefs/ma_01/)

*"Without naturally occurring greenhouse gases, Earth's average temperature would be near 0°F (or -18°C) instead of the much warmer 59°F (15°C)."*

Thus the theory says that "greenhouse gases" absorb most of the radiation emitted by the heated surfaces of the Earth. This causes the Earth's atmosphere to "trap" heat and therefore adding more "greenhouse gases" – read Carbon dioxide (CO<sub>2</sub>) – will result in even higher temperatures.

To support this hypothesis the IPCC has drawn information from various scientists and regularly compiles this information in reports. One oft quoted diagram is this updated Energy Budget radiation diagram.



What this shows is average radiation energy flows between Earth's surfaces, atmosphere and space. We need not concern ourselves with any argument about these figures and what they mean – this has already been widely canvassed.

Let us simply accept this represents a significant summary of the “settled science” of the “greenhouse effect” and the warming caused by these “greenhouse gases”.

What I want to focus on is the “Outgoing Long wave Radiation” shown in the diagram as approximately 239 W/m<sup>2</sup>.

So let me summarise the situation:-

1. The Sun continuously warms the Earth's surfaces and atmosphere; and,
2. The Earth radiates 239 W/m<sup>2</sup> continuously to space; and,
3. This radiation is the **only** method of removing energy from the Earth's atmosphere and land surfaces to space; and,
4. Of this 239 W/m<sup>2</sup> a mere 40 W/m<sup>2</sup> is emitted directly from the surface; and,
5. 199 W/m<sup>2</sup> is absorbed by greenhouse gases – Water Vapour (H<sub>2</sub>O) and Carbon dioxide (CO<sub>2</sub>) and then emitted to space by these gases.

Thus 199/239 or ~83% of the Earth's ability to lose energy is because "greenhouse gases" radiate infra-red energy and a mere ~17% is directly emitted from the surface.

The other part of the story is the claim that because Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) are not "greenhouse gases" they do not absorb any significant amount of the radiation emitted by the Earth's surface and accordingly they do not radiate any significant amount of infra-red radiation to space.

There is certainly evidence that Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) are essentially transparent to infra-red radiation.

Now for the "Paradox"!

We all know the temperature of the atmosphere changes over time. The air can be hot or cold depending on the season, time of day, clear skies etc.

It is unrealistic to claim that the temperature of Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) does not change – they constitute 99% of the substance we call air after all.

Obviously they absorb energy and increase in temperature by contact with warm surfaces – climate science says they are **not** "greenhouse gases" so do not absorb radiation but they are subject to heating and cooling. We all know that hot air rises.

So the really significant question is:-

1. If 99% of the atmosphere obviously increases in temperature by absorbing energy from the Earth's surfaces - but not by radiation; and,
2. This 99% cannot radiate this energy to space as claimed by climate science,

**Then how does the 99% of the atmosphere ever lose energy and thus cool down?**

**Convection** involves rapid movement of energy but because convection is limited to the atmosphere it does not allow for energy loss to space – it merely moves energy around and transforms it into different forms – it may cool the surface but it simply transfers the energy to the atmosphere, not to space.

**Conduction** depends on thermal contact with other matter and the space surrounding the Earth is essentially a vacuum. The Earth cannot lose energy to space by conduction.

So how does **the 99% of the atmosphere - Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) - ever lose energy and thus cool down?**

**We all know it does** – air temperature can be over 40 degrees C in some locations in summer and below freezing in winter.

**Well, climate science clearly shows that the only mechanism available to Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) to lose energy and thus cool down is by transferring their energy to the “greenhouse gases” which heat up and in turn radiate it to space.**

**The energy Budget diagram clearly shows ~83% of the radiation to space is from “greenhouse gases”.**

It is accepted science that there are three mechanisms of thermal energy transfer – conduction, convection and radiation.

99% of the atmosphere - Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) - apparently doesn't radiate infra-red radiation – they aren't “greenhouse gases” after all.

Convection simply moves energy around and transforms it into other forms.

So 99% of the atmosphere **can only cool down by conduction of their energy to “greenhouse gases”** by collisions between gas molecules and the “greenhouse gases” alone radiate the energy to space.

**But** the chance of Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) colliding with a “greenhouse gas” are of the order of about three in one hundred for Water Vapour and less than one in one hundred for Carbon dioxide (CO<sub>2</sub>).

If this is all true, and climate science says it is, the real “heat trapping” gases are Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) and the Earth relies on “greenhouse gases” to keep cool!

So can someone please explain to me how increasing the concentration of the major coolants in the atmosphere and thus increasing the likelihood that Nitrogen (N<sub>2</sub>) and Oxygen (O<sub>2</sub>) will be able to transfer their energy to space will result in more “heat trapping” causing global warming?

Logic clearly says the opposite is more likely.

And that is the Paradox of Climate Science!

**PS:** <http://www.livescience.com/19700-hottest-place-earth.html>

“Satellites, on the other hand, can get a reading on these hard-to-reach, harsh places because they can scan every piece of the Earth's surface.”

“The single highest land skin temperature recorded in any year of the study was found in the Lut Desert in 2005 and measured a stunning 159.3 F (**70.7 C**).”

How can that happen if the Sun supplies only 161 W/m<sup>2</sup> as indicated in the Energy Budget and “back radiation” supplies 333W/m<sup>2</sup> for a total of 494 W/m<sup>2</sup>?

494 W/m<sup>2</sup> is equivalent to about 32.5 degrees C – where did the other 37.5 degrees C come from?