Climate Change
http://colutron.com/download_files/climate_change.pdf

There is no doubt that there is an ongoing climate change at the present time, and we are experiencing a warmer climate lately. There have always been natural changes in the climate, both long term and short term cyclic variations. When some scientists blame the increase in global temperature on the human production of greenhouse gases, then from my point of view, as a theoretical physicist, I say they are barking up the wrong tree and it is costing us a lot of money. In fact, it can easily be shown, without having to use complicated technical language, that the concept of a solar greenhouse effect contributing to global warming is wrong.

First, take a look at the figure below which was published in *Climate Change 2001* by the IPCC (Intergovernmental Panel on Climate Change) and jointly by WMO and UNEP (World Meteorological Organization and United Nations Environmental Programme) ISBN 0521 80767 0 page 90. The figure, which serves as a norm for the greenhouse promoters, shows that the incoming radiation from the Sun totals 342 watts and that the Earth's surface radiates back 390 watts. The extra 48 watts gained at the Earth's surface is, according to the greenhouse effect, generated by a mysterious back radiation caused by greenhouse gases. All values in the figure are in watts per square meter.

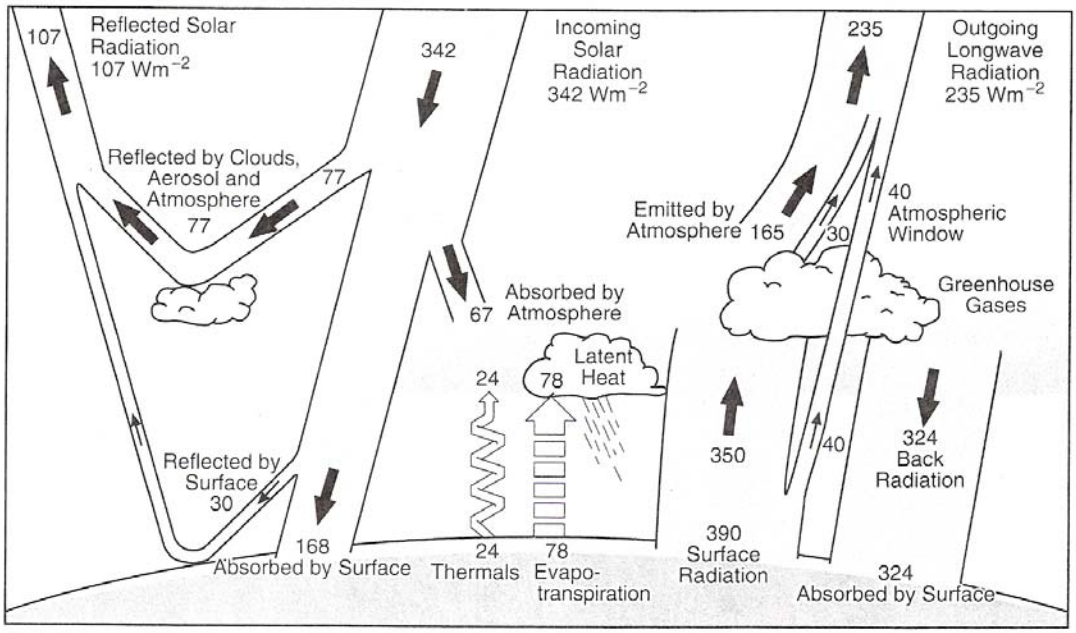

Figure 1.2: The Earth's annual and global mean energy balance. Of the incoming solar radiation, 49% (168 Wm^{-2}) is absorbed by the surface. That heat is returned to the atmosphere as sensible heat, as evapotranspiration (latent heat) and as thermal infrared radiation. Most of this radiation is absorbed by the atmosphere, which in turn emits radiation both up and down. The radiation lost to space comes from cloud tops and atmospheric regions much colder than the surface. This causes a greenhouse effect. Source: Kiehl and Trenberth, 1997: Earth's Annual Global Mean Energy Budget, *Bull. Am. Met. Soc.* 78, 197-208.

The problem:

We are all familiar with watts when using light bulbs and electric heaters. An electric heater might draw 1000 watts, which equals 1 kilowatt, when plugged in to the electric power circuit, but the wattage has really no meaning unless we let it run for a certain

length of time, say 24 hours, because the power company charges us for the energy we use over a certain period of time. The energy used by a heater that draws 1000 watts, or 1 kilowatt, and has been on for 24 hours, is 24-kilowatt hours and at a rate of 10 cents per kilowatt-hour, for example, the energy cost would be $2.40.
Let us now look at the radiant energy delivered by the Sun over a period of 24 hours and the radiant energy leaving the Earth's surface in the form of global warming. According to the figure, we receive 342 watts from the Sun, which, when multiplied by 24 hours equals 8.2 kilowatt hours, but the Earth re-radiates 390 watts times 24 hours and that equals 9.36 kilowatt hours which is 1.15 kilowatt hour more than provided by the Sun. So where does this extra energy of 1.15 kilowatt hour come from? It cannot possibly come from the Sun.

My professor, Manne Siegbahn at the Nobel Institute for Physics in Stockholm, once taught me that when testing a scientific theory; always ask, "From where does the energy come?" If something produces more energy than it consumes, as in the figure above, then there is a problem. Scientists call this a violation of the law of the conservation of energy.

Since the Earth has to radiate away as much power (watts) as it receives from the Sun, we can compare the flow of solar energy in our climate circuit to that of electric current in a conductor, or to the flow of water in a garden hose. The input flow has to equal the output flow. For example, if a faucet supplies 342 gallon per hour to a garden hose then 342 gallons per hour has to come out the other end and nowhere inside the house can the flow exceed the 342 gallons per hour. The predicament with the greenhouse effect is that, in contrary to the laws of physics, it predicts a larger energy flow of 390 watts, which is attributed to global warming, than the available flow of 342 watts delivered by the Sun and radiated away by the Earth.
Lars Wahlin
President
Colutron Research
Boulder, CO

See also http://colutron.com/download_files/global_warming.pdf which also describes mankind's influence on the climate.