Free yourself - from CO$_{two}$

Climate, climate, climate. Not a news item or a day goes by without constantly being reminded of the topic of climate and CO_2. CO_2 stands for carbon dioxide.

Carbon occurs in nature both pure and chemically bound in a wide variety of forms. Carbon compounds form the molecular basis of all life on earth and are of fundamental importance for industrial processes, in organic chemistry and in biology.

Like the water cycle, the natural carbon cycle also has a vital function. Without the carbon cycle, there would be no life on earth, at least none as we know it.

A highly sought-after form of pure carbon is the diamond. It consists of a three-dimensional lattice of carbon atoms, is extremely hard, transparent and is often used for jewelry but also in industry. Graphite is another pure form of carbon. It consists of several layers of carbon - atoms that are arranged hexagonally.

However, most carbon is present in compounds, often with hydrogen as a bonding partner. These substances are known as hydrocarbons. The best-known hydrocarbons are the fossil fuels crude oil and natural gas. Crude oil consists of long different hydrocarbon chains, while natural gas consists mainly of methane (CH_4).

The several types of coal (e.g. hard coal, lignite) are further examples of carbon-containing compounds. Coal is formed from dead plant material in a transformation process that takes several million years.

Carbon and oxygen are bound in many organic compounds, such as carbohydrates, fats and proteins, which are the basic building blocks of life.

Carbon dioxide (CO_2) is produced both as an end product during thermal use (combustion) and during material use. It is also produced when food is burned as part of the metabolism.

CO_2 is a trace gas that only occurs in the atmosphere in a very small proportion of around 0.04 % (by volume). Despite its extremely low proportion in the atmosphere, CO_2 is assigned a key function in the relevant narratives: It is said to be almost solely responsible for the rise in atmospheric temperature observed in recent years.

There is no evidence on a scientific basis for this "attribution of blame"[1] , but presumption and belief are sufficient. Reason enough to examine this belief in detail on a physical basis.

For a long time, the global (natural) carbon cycle was considered balanced: The carbon dioxide CO_2 naturally released into the atmosphere each year was also taken up again by nature. At least this is generally assumed to be normal and this pre-industrial value of 280 ppm is taken as the reference value for the carbon content in the atmosphere.

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[1] https://journalijecc.com/index.php/IJECC/article/view/4124, (18.04.2024), Andrej Pustišek, Stuttgart University of Applied Sciences, - CO_2 and Climate Change: Unveiling the Missing Experimental Evidence

When making numerical comparisons, it should be noted that the quantities of CO_2 often only indicate the pure carbon content. The pre-industrial value of 280 ppm corresponds to around 600 gigatons (Gt) of carbon or 2,200 Gt of CO_2. Today, this value is around 900 Gt as pure carbon or 3,300 Gt of CO_2.[2]

Since industrialization, this natural CO_2 has been joined by so-called anthropogenic CO_2 currently amounting to around 1 % (approx. 36 Gt CO_2 /a), which is held solely responsible for the continuous rise in the atmosphere, at least according to general narratives and sources. CO_2 is generally described as by far the most problematic "greenhouse gas", as it is said to be able to deflect heat radiation emitted from the earth into space back to the earth.

It is the only trace gas whose concentration can presumably be influenced by humans and could therefore possibly be reduced again. Most carbon dioxide comes from huge natural sources. Additional CO_2 is produced when fossil fuels such as oil, coal, wood and gas are burned.

An interesting figure emerges if we initially only consider a person's CO_2 emissions from breathing. Depending on activity and age, this is between around 200 kg/a and 2,000 kg/a.[3] Based on a rough assumption of an average of 1,000 to 1,200 kg per year per person, this results in **annual CO_2 emissions of around 8 to 10 gigatons from human respiration alone**. **This corresponds to around a third of the so-called anthropogenic CO_2.**

With a density of 1.98 kg/m³, CO_2 is significantly heavier than oxygen (1.429 kg/m³) and nitrogen (1.25 kg/m³) and its content should theoretically be much higher near the earth due to gravity. However, like all gases, CO_2 is distributed evenly in the atmosphere (entropy) in accordance with the general laws of physics.

This is a good thing, because it means that CO_2 reaches the plants at high altitude on the one hand and makes our lives possible on the other. We could not live in a CO_2 -enriched atmosphere. The disadvantage of this even distribution is that it makes it difficult or impossible to clearly identify the individual polluters.

Converting the annual CO_2 emissions to the increase in ppm results in a value of approx. 1.3 ppm for 1960, 2.9 ppm for 1990 and 4.5 ppm for 2021.

[2] Brugger, M. (2024), Windwahn - The wind mania and its climatic consequences. Novum Verlag, p. 61 ff

[3] co2online, (June 28, 2019), https://www .co2online .de/service/klima-orakel/beitrag/wie-viel-co2-atmet-der-mensch-aus-8518/

These calculated values correspond well with the values recorded in Fig. 1, which show an increasing increase from year to year.

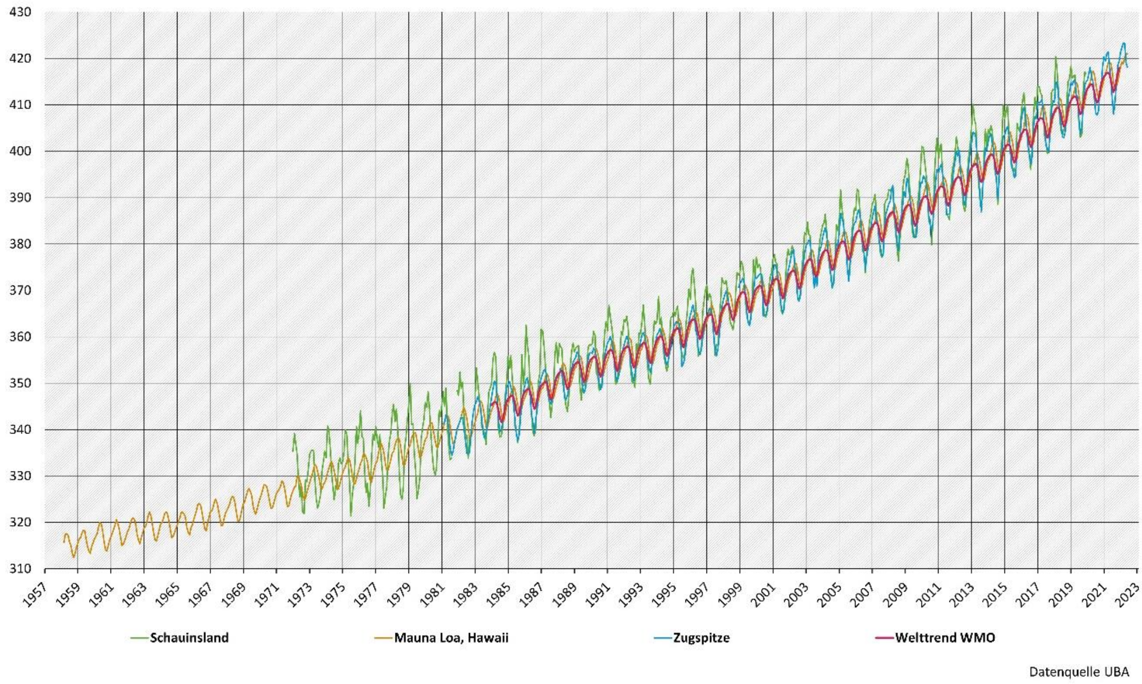

Fig. 1: Increase in CO_2 concentration in the atmosphere in ppm (monthly averages)

It can therefore be assumed that the increase in CO_2 in the atmosphere is of anthropogenic origin. However, this does not yet conclusively explain the effects of this increase and the question arises as to whether CO_2 can actually be responsible for the rise in temperature. This will be examined with the following calculation.

The specific heat capacity of CO_2 at 25 °C is approx. 0.85 kJ/kg*K. In order to increase the temperature of the entire atmospheric CO_2 by 1 °C, an amount of energy of $3.3 * 10^{15}$ kg * 0.85 kJ/kg*K = $2.8 * 10^{15}$ kJ or 2.8 exajoules (EJ) is required.

For comparison: 7.3 EJ arrive on Earth from the sun every minute, i.e. 2.6 times more energy. However, only half of the Earth's surface is irradiated by the sun. There are also CO_2 absorption bands in the spectrum of radiation coming from the sun, i.e. atmospheric CO_2 also absorbs shorter-wave infrared radiation energy from the sun, although it should be noted that energy content is limited by absorption.

Based on the theoretical assumption that only 1 % of the sun's radiation energy lies in the CO_2 absorption bands, approx. 4.38 EJ (7.3 EJ * 60/100) would act on the CO_2 every hour. Since only half of the Earth is irradiated, the temperature of the CO_2 would have to increase by 4.38 EJ/1.4 EJ per K = 3.1 K per hour if it were fully absorbed.[4]

This would actually happen in a gas-tight space, but not in the atmosphere. CO_2 transfers its increased energy to the other gases (nitrogen, oxygen and argon)

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[4] Brugger, M. (2024), Windwahn - The wind mania and its climatic consequences. Novum publishing house, p. 65

through collisions, rises into cooler layers or emits it again as infrared radiation in the direction of the lower temperature, which drops by 6.5 to 10 K per 1,000 m altitude (i.e. always towards space). The low mass fraction of CO_2 compared to the other gases and water vapor must also be taken into account.

The other gases behave in exactly the same way and there is no increase in energy. In the Oslo experiment,[5] which in principle is very simple and easy to understand, the physicists wanted to investigate how CO_2 behaves when heated by radiation and whether CO_2 can cause a greenhouse effect through re-radiation. The set-up is described in detail and the results are self-explanatory negative. The so-called greenhouse effect is nothing more than a completely false hypothesis, that can neither be physically explained nor proven.

CO_2 is very soluble in water, as is generally known from sparkling water. The solubility depends on the partial pressure of the CO_2 and the temperature and follows Henry's law. The following applies: the higher the pressure, the more goes into solution, the higher the temperature, the less goes into solution.

After the carbon dioxide passes into the water, it reacts and forms carbonic acid, $H_2 CO_3$, which dissociates to form a hydrogen carbonate ion, HCO_3^- , and a proton, H+. As the pH value increases, HCO_3^- dissociates further to form a carbonate ion, CO_3^{2-}, and a proton, H^+. Both ions are slightly acidic.

Due to its good solubility, large quantities of CO_2 are also washed out of the atmosphere by precipitation (acid rain). These acidic components are responsible, for example, for the dissolution of minerals such as calcium and magnesium in percolating rainwater or groundwater recharge.

In seawater, CO_2 is the basis for the photosynthesis of phytoplankton, which absorbs CO_2 and releases oxygen. According to general information, 50 % of the earth's oxygen is produced in the oceans. An amount of carbon equivalent to 38,000-39,000 gigatons is stored in the world's oceans, which is around 46 times more than in the atmosphere.

Decreasing amounts of ice and water on the mainland, decreasing rainfall, melting snow on the mountains and receding glaciers release additional CO_2. The annual fluctuations of 10 ppm are presumably due to the temperature-dependent solubility of CO_2 in water. These fluctuations are also an indication that the myth that anthropogenic CO_2 remains in the atmosphere for centuries cannot be true.

It is undisputed that CO_2 can absorb energy quanta (photons). However, its influence is and remains very small. The answer to the simple question of whether the gas molecule can reflect infrared radiation is left to the reader, as is the answer to the second question: How can a gas outwit the second law of thermodynamics, i.e. how does the gas manage to raise thermal energy from a lower energy level to a higher energy level?

Because it would actually have to be able to do this if it could deflect infrared heat radiation from the warm earth into the cooler atmosphere, from the cooler

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[5] Scientific Research Publishing - The Oslo CO2 experiment
https://www.scirp.org/journal/paperinformation.aspx?paperid=99608

atmosphere back to the warm earth and transfer energy in the process. A warm teacup does not get warmer if a cold one is placed next to it! An energy fluctuation or alternating heat is and remains proven physical nonsense, just like the greenhouse theory based on it!

But as we all know, faith moves mountains!

"We must always repeat what is true, because error is always being preached around us, not by individuals, but by the masses. In newspapers and encyclopaedias, in schools and universities, error is everywhere at the top, and it is comfortable and at ease in the feeling of the majority that is on its side." [6]

Manfred Brugger in July 2024

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[6] Goethe, J. W., Conversations. With Peter Eckermann, December 16, 1828