

What We Get And What We Give To The Earth

Find the here described connections in the overview graph and add the correct number to each circle!

The Sun

The sun is about 300.000 times as heavy as the earth and similar to it about 5 billion years old.
It is an inconceivably huge nuclear fusion reactor: In its inner, lighter atomic nuclei (mainly hydrogen) are permanently merging to mass richer ones (mainly helium).

Without the sun, the temperatures on earth would be similar to the rest of space: -454°F (-270°C)!
Out of the nuclear fusion processes in the sun inner gets enough radiation to heat the earth for some more billion years to life enabling temperatures – from a distance of about 150 million kilometers!

The Circle Of Life

The green plants use the energy of the sunlight to synthesize organic (complex, energy rich) substances (themselves and their nutrients) out of anorganic (simply structured, energy poor) ones.
This process is called photosynthesis. („composition with light“)

For this process they need the anorganic substances carbon dioxide (CO_2) ...

... and water (H_2O).

Out of these they produce, besides the organic substances, also oxygen (O_2), which they submit to their surroundings.

We gain almost all of our energy from organic material which was composed in plants originally: Organic material is the nutrition for all the creatures, that burn it in a special way permanently in every living cell – and it is the fuel for almost all vehicles, heaters, machines and factories.

Oxygen is necessary for (almost) every combustion...

...and in every combustion of organic material carbon dioxide will be produced.

The soil organisms (decomposers like earthworms, ants, mold) dismantle the organic remains of other organisms down to anorganic substances, that the plants can consume again through their roots or leaves: The circle of life is closed!

In water sometimes there is not enough oxygen for the decomposers to dismantle all the organic substances.

In that case, many water organisms will have to die, the water will dark und begin to stink. One says, the water „falls over“.

Fossil Fuels

The fossil fuels (oil, natural gas, coal) arose out of organic (energy rich!) remains of living creatures in the course of millions of years.

For centuries the fossil fuels supplied almost all the energy for our technology – but now they seem to be running out gradually.

Additionally, in oil recovery and transport, again and again cataclysms happen. Sticky by oil, animals die agonizing. Whole regions and ocean parts are devastated.

Earth Warming And Climate Catastrophe

Heat is generated in each combustion.

The atmosphere contains, amongst others, water vapor and some other gases, that, similar to a greenhouse, prevent the warmth coming out of the solar radiation and earthly processes from getting out to space.

Without the natural greenhouse effect, it would be about 90°F colder on earth!

Besides water vapor, carbon dioxide is one of the three most important greenhouse gases. As our energy consumption is growing, the atmosphere contains more and more of it, the atmosphere is warming up.

Additionally, we keep more and more cattle, that produce methane in their digestion process.

Methane is the third of the most important greenhouse gases.

- By virtue of global heating glaciers all over the world and the millions of years old polar icecaps are melting, the sea level is climbing and more and more humans and animals are getting in distress!
Additionally, we expect more and more heavy storms and droughts.
That's what we call the „climatic catastrophe“.

Regenerative Energies

Today we are gaining more and more energy out of sources that will not run out, but regenerate again and again.

- Some countries (like Austria, Switzerland, Norway, Sweden) gain the major part of their energy out of hydropower.
- In very suitable places wind power plants („pinwheels“) can already today produce electric power cheaper than fossil power plants!
- The origin of wind are spatial and chronological fluctuations of solar radiation.
- Also electricity from solar cells is (almost) competitive today and quickly getting cheaper and cheaper.
- Almost everywhere on earth there are houses today producing an excellent living climate without any conventional (active) heating system – being heated mainly by the sunlight: „passive houses“!
- The „TWIKE“, a vehicle for two persons, is electrically powered (e.g. with solar power – producing no CO₂!) and additionally by muscle power. It goes about 5 times as far as comparable hatchback driven vehicles with the same amount of energy!
Today the electric power for 100 driven miles costs about 2 dollars.

Food Production

- The industrialized agriculture with bigger and bigger machines and massive use of chemicals up to genetic engineering is our attempt to cover our increasing need for nutrition and ever growing hunger for flesh.
Therefore the tropical rain forests („the earth's green lungs“) are faster and faster cutted down and converted to farmland.
- The soil is poisoned by the industrialized agriculture with fertilizers (mainly nitrate) and pesticides.

- For a nutrition with animal products much more space, energy and water is needed than for vegetarian (or even vegan) nutrition.

- But: only ruminants (e.g. cattle, deer, fallow, girafs) and some other mammals (horses, rabbits etc.) are capable to get their energy from green plant parts (leafs, gras). By eating these animals, we can produce our nutrition even on areas, where no crop could be cultivated.

Drinking Water

- The groundwater is extremely precious as drinking water, as it has been filtered and purified in the ground, often for hundreds of years.
- Failing that, often surface water from rivers and seas is prepared as drinking water.
- Where there is not enough water locally available or this water is (mostly because of the nitrate pollution from industrialized agriculture) not suitable as drinking water, water (in many places all over the world!) has to be conducted through pipelines, often over distances of hundreds of miles.
- The rainwater is almost everywhere suitable as drinking water.
- But many exhausts turn the rainwater to acid („sour rain“), which attacks the plants and even stone or concrete buildings.

Consume

- In blast furnaces iron Ore is converted to iron at temperatures of about 2000°F. Very much cole (and thereby energy!) is consumed in that process.
- Plastics are mainly produced from oil.
- Extremely problematic with plastics is their disposal: Nature often takes centuries to completely degrade them! Many of them being eaten by animals several times, that often die agonizing. Other animals get caught and strangled by plastic parts...
- The cheapest clothes (but also high-quality „functional clothing“) are mostly made of plastics („synthetic“).
- Superior everyday clothes mostly consists of herbal (e.g. cotton) ...
- ... or animal products (e.g. leather, sheep wool)