

## GLOBAL WARMING

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Global warming is a term referring to the impact of human actions on the climate, for example, the burning of fossil fuels (coal, oil, and gas) and deforestation, which leads to the emission of a large amount of 'greenhouse gases' into the atmosphere, of which carbon dioxide is the most important.

Global warming will cause large-scale climate change that will adversely affect human communities.

The greenhouse process is a natural process that maintains the Earth's temperature at levels conducive to life. However, over the past century and a half, the concentration of greenhouse gases in the atmosphere has increased significantly. Currently, this concentration exceeds the historical level by more than a third.

The greenhouse effect leads to the warming of the Earth's surface, oceans and lower atmospheric layers due to specific gases that are present in the air. These gases allow solar radiation to enter the lower atmosphere but prevent it from escaping into space, creating a metaphorical blanket of the Earth.

The United Nations organization has made the following conclusions referring to the concentrations of greenhouse gases and rising temperature:

- The concentration of greenhouse gases in the Earth's atmosphere is connected to the average temperature on Earth.
- The concentration and temperatures have been rising consistently since the time of the Industrial Revolution.
- About two-thirds of greenhouse gases are carbon dioxide (CO<sub>2</sub>). It is produced by burning fossil fuels.

For many years our climate has been in a condition of balance with a concentration of CO<sub>2</sub> of about 280 ppm in parts per million, which is connected with the proportion of amount molecules of carbon dioxide in the atmosphere to the

number of molecules of all the gases in the atmosphere.

The various fields that generate carbon dioxide, as a result of human activity are given in Table 1.

Table 1. Worldwide sources of carbon dioxide emissions, 2018.

	Carbon dioxide emissions, %
Electricity	27
Transport	28
Industrial (including cement manufacture)	22
Residential (heating, wood fires)	12
Agriculture other	11

According to independent analyses by NASA and the National Oceanic and Atmospheric Administration (NOAA), Earth's average global surface temperature in 2019 was the second warmest since modern record-keeping began in 1880 (Letcher, 2021).

For the necessary reduction of carbon dioxide emissions, there is such an opportunity: sequestration of carbon dioxide resulting from burning fossil fuels, rather than releasing it into the atmosphere, to become much more efficient in generating and using energy, as well as providing energy supply from non-fossil fuel sources.

#### References:

1. Letcher, T. M. (2021). Global warming – a complex situation. In Elsevier eBooks (pp. 3–17). Retrieved from <https://doi.org/10.1016/b978-0-12-821575-3.00001-3>
2. Houghton, J. T. (2005). Global warming. Reports on Progress in Physics, 68(6), 1343–1403. Retrieved from <https://doi.org/10.1088/0034-4885/68/6/r02>