CAUSES OF GLOBAL WARMING

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Since the middle of the 20th century, the global temperature of the Earth's surface has been increasing rapidly. Global warming is explained by the presence of the greenhouse effect – a consequence of the increased concentrations of greenhouse gases such as in the Earth's atmosphere.

Greenhouse gases in the atmosphere act as a mirror and reflect back to Earth some of the heat radiation that would otherwise be lost in space. The higher the concentration of greenhouse gases, such as carbon dioxide, in the atmosphere, the more heat energy is reflected back to Earth (Rohrer, 2007). Greenhouse gases that have the greatest impact on the earth's climate: Carbon dioxide (72%), Methane (19%), Nitrous oxide (6%) (Mulko, 2022).

1. Carbon dioxide. The increased content of gas in the atmosphere leads to another global danger for people - the greenhouse effect. Carbon dioxide, like greenhouse glass, lets the sun's rays through, but retains the heat of the earth's heated surface. As a result, the average air temperature rises, the microclimate deteriorates, which affects human health. The concentration of carbon dioxide in the atmosphere in 2021 reached 414.72 ppm (parts per million) (Lindsey, R, 2022). The last time Earth had similar levels of, there were trees at the South Pole (Nield, 2019).

2. Methane. Methane is a more powerful greenhouse gas than carbon, and has the second largest contribution to global warming. It is the main driver of climate change, but it decays much faster, making its impact more short-lived. Experts believe that limiting methane emissions may be one of the simplest and most effective immediate measures to slow climate change.

3. Nitrous oxide. Anthropogenic sources of atmospheric nitrous oxide are:

- Agriculture, namely: increasing the cultivated area; soils and intensification of their processing (due to increased access of oxygen to

soils, the nitrifying activity of aerobic bacteria is intensified); use of nitrogen fertilizers, increase in animal waste, volume growth burning or microbiological destruction of biomass, etc.;

- Emission into the atmosphere of energy-intensive production waste;
- Pollution of the atmosphere by exhaust gases from vehicles technical means (cars, ships, planes, etc.);

Modern global warming is identified on the basis of data from instrumental observations on the world weather network, which covers all continents and oceans, namely: on the basis of the analysis of surface air temperature. Also, the level of global warming is determined through various model calculations regarding the influence of the deviation and temperature of various components of radiative forcing (greenhouse gases, aerosols, albedo, solar constant, volcanic emissions, etc.) and through theoretical model calculations based on the logarithmic law of the dependence of global surface air temperature anomalies on variations content in the atmosphere.

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