

greenhouse effect.

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GLOBAL WARMING

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Global warming is an increase in average global temperature caused by releasing heat-trapping gases. It occurs when harmful air pollutants, mainly carbon dioxide (CO₂) is concentrated in the atmosphere and absorbs thermal energy. The consequences of global warming are different: glaciers melting, rising sea levels, extreme weather changes, raging wildfires, droughts, and powerful storms. Today many scientists and leading world organizations pay attention to this urgent problem.

One of the things that makes an enormous contribution to global warming is the greenhouse effect. The discovery of it belongs to the Swedish chemist and physicist Svante Arrhenius. Usually, the Earth's surface absorbs incoming sunlight and solar radiation and then bounces it back into space. However, scientists proved that certain gases, called greenhouse gases, keep the energy in the atmosphere. The natural greenhouse effect makes Earth's climate appropriate for living. Without it, the atmosphere would be -18°C, instead of the normal 15°C. Nevertheless, the enormous concentration of greenhouse gases is responsible for heating our planet.

Throughout the history of the Earth, the amount of these gases could go up and down. However, it remained nearly the same for most of the time. For instance, the level of carbon dioxide earlier was approximately 280 parts per million. In the 18th

century, humanity made a big transition from creating goods by hand to using machines. People started to burn many fossil fuels like coal, oil, natural gas to produce energy and electricity. During the combustion of these compounds, water vapor (H₂O), methane (CH₄), ozone (O₃), carbon dioxide (CO₂), nitrous oxide (N₂O), chlorofluorocarbons (CFCs), the most prevalent greenhouse gases, are produced in a large scale (Pappas, 2020). In 2019, the average concentration of CO₂ increased to 409.8 parts per million. This amount is higher than at any point for the last 800,000 years (Lindsey, 2020). One of the largest sources of CO₂ is also deforestation. It is a well-known fact that during the photosynthesis process, trees consume carbon dioxide and release oxygen. After logging, large quantities of CO₂ are discharged, too.

Methane is much less abundant than CO₂, yet it is much more effective at trapping heat. Methane comes not only from natural gas but also from livestock, agricultural activities, and waste management. The main companion of CH₄ is usually nitrous oxide. During the processes of combustion in transport and power station, ozone is emitted. Fluorinated gases find their application for the most part as refrigerants, solvents, powerful reagents in organic synthesis and chemistry. All these compounds can be in the atmosphere for a long time and have numerous impacts on it. They are predominantly produced due to industry factors. They are also closely related because releasing one greenhouse gas leads to releasing another.

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PROSPECTS FOR ARTIFICIAL INTELLIGENCE

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Artificial intelligence is usually something distant and completely incomprehensible, but nevertheless, it is constantly talked about in the news and it attracts a lot of attention to itself. So, what is it and why is it the future?

The very idea of an artificial network reproduces the work of the nervous system of the human brain. In other words, neural networks represent the appearance of simple elements that can solve certain problems, analyze errors, develop and learn.

In fact, a neural network is a copy of the human brain. It can be compared to a child who needs to be taught to perform simple tasks at first, gradually moving on to more complex ones.

In simple words, it is a computer program consisting of many small programs and algorithms that can solve different problems. For example, recognize events and objects, sort and analyze them, as well as predict the course of development in the future. But the main feature of artificial intelligence is the ability to develop and learn independently by analyzing the success and mistakes made in the past.

Its benefits are already being used in banking, police, medicine, automation, and power supply control systems.

For example, this system can remember and recognize the face of the intruder from surveillance cameras and conduct a quick search in the police base. It is also used at large stations and substations for accounting and control of energy resources.

Separately you can consider the heat supply and water supply system of