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Article



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THE INTERACTION OF ENERGY WITH CLIMATE CHANGE

Abstract: The article substantiates the problems of the energy of fossil resources underground, which are changing the climate and causing global warming throughout the planet, and solving these problems by means of energy efficiency and the transition to clean energy.

Key words: climate change, greenhouse effect, greenhouse gases, fossil fuels, renewable energy sources.

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Introduction

The global climate is changing and these ecosystems pose an increasingly serious threat to human health and the economy. Recent research suggests that Central Asia is also facing climate change, including sandstorms, extreme weather events, droughts and magnetic storms.

These changes are due to the activities of many people in Central Asia, including, most importantly, the release of large amounts of greenhouse gases into the atmosphere as a result of burning fossil fuels for electricity generation, heating and transportation. Combustion of fossil fuels releases pollutants that are harmful to the environment and human health.

Energy use is the largest source of greenhouse gas emissions from human activities. About two-thirds of greenhouse gas emissions are related to the combustion of fossil fuels for heat, electricity, transportation and industrial energy[1].

The greenhouse effect is the heating of the lower layers of the Earth's atmosphere as a result of an increase in the concentration of certain gases in it. In the greenhouse effect, the sun's rays heat the Earth's surface, and at the same time the heat is retained on the planet and cannot be returned to space. Greenhouse gases prevent this. As a result of these processes, the temperature of the planet rises [2].

Greenhouse gases mainly include the following gases:

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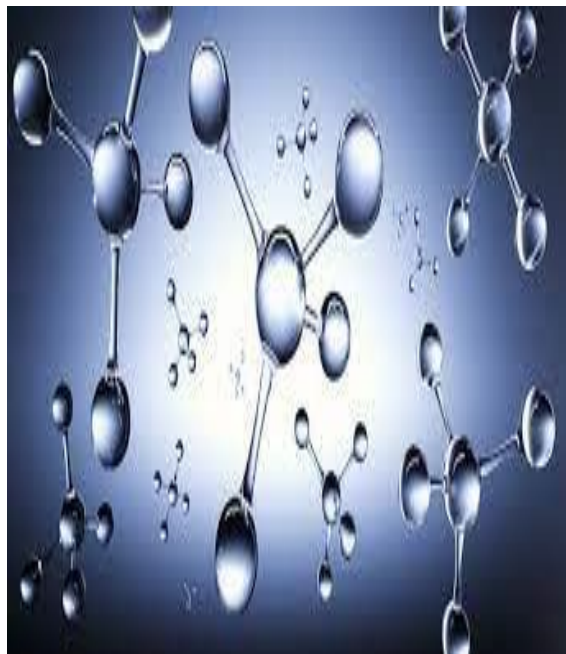
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Carbon dioxide:



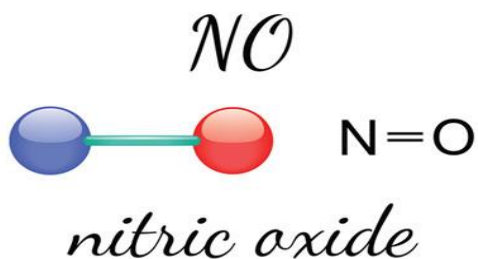
This gas is produced by burning fuels, such as oil and gas, which release carbon into the atmosphere, as well as other industrial processes [3].

Methane:



Methane is mainly produced in agricultural processes, such as livestock, because animals produce a lot of methane during digestion and in manure [4].

Nitric oxide:



The use of fertilizers for large-scale agricultural production produces large amounts of nitrogen oxides [5].

Water vapor:



Water vapor (H₂O) has the ability to absorb infrared radiation from the atmosphere.

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Ozone:



There are two types of ozone: the first type is formed naturally at high levels in the atmosphere due to the fission of oxygen atoms by infrared radiation; the second type is produced by internal combustion engines and power plants that produce volatile organic compounds and nitrogen gases [6].

In fact, energy-related greenhouse gas emissions can be reduced in two ways: by choosing clean energy sources, for example, by replacing fossil fuels with non-combustible, renewable sources, and by saving energy and through it reduction of total energy consumption.

To avoid the worst consequences of climate change, we need to make these changes long before we run out of fossil fuels. The more greenhouse gases we emit into the atmosphere, the less likely we are to limit the harmful effects of climate change. In this regard, increasing the production of renewable energy from solar and wind energy has played an important role [7].

Power generation often requires large sums of money, and once a power plant is commissioned, it is expected to last for decades. Investments in traditional polluting technologies are slowing the transition to clean energy. Such views could delay energy capacity and resources for decades, making it difficult to come up with new solutions [8].

For example, continuous investment in transport infrastructure based on fossil fuels, climate change mitigation, noise reduction, and ultimately the transition to sustainable modes of transport that are essential for improving people's quality of life. will be a setback for. Climate change based on a rise in temperature from 6.3 to 9 °F could increase the need for additional power generation capacity by about 10-20% by 2050. That would require hundreds of billions of dollars in additional investment [9].

A warmer climate could reduce energy production efficiency for many fossil fuels and nuclear power factories, as these plants use water for cooling. The colder the water, the more efficient the generator. Thus, high air and water temperatures can

Fluorine compounds (chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride):



Some of these compounds are produced as by-products of industrial processes, such as aluminum production, while some fluorine gases are produced specifically for use in products and processes.

reduce the efficiency of converting the fuel of these plants into electricity.

Reducing food waste, increasing urban horticulture, improving supply chains, and increasing the number of solar-powered devices may seem like small parts of the big problem, but together they can pave the way for how innovative technologies and practices can emerge and change sustainability more broadly.

Mankind has faced climate change several times. They have also been one of the driving forces behind historical development. Today we know all the factors that lead to the accumulation of greenhouse gases and rising temperatures. It will be very difficult to change the current trend, as it will require the efforts of all mankind and a radical reconstruction of the world economy. To do this, we need to understand that the greenhouse effect is a global problem that threatens not just all countries, but all people [10].

Summary and Suggestions

In short, we need to take the following measures to avoid the greenhouse effect in the future:

- Reducing the use of fossil fuels and switching to renewable energy sources. Today, the main sources of CO₂ are fossil fuels: oil, coal and gas. To reduce them, humanity needs to switch to renewable energy: solar and wind energy. Their share in the overall balance sheet has been growing rapidly in recent years, but these figures are not enough;
- Improving energy efficiency and modernizing industries with energy-saving technologies. Improving energy efficiency, this applies to industrial production and energy production, housing and communal services. The energy density of the products should be significantly

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- reduced. We need new technologies that do not harm the environment;
- Increase greenery in nature, prevent forest fires, increase afforestation, stop the destruction of forests by wild animals;
 - Transition to eco-friendly agriculture;
 - Preservation of organic matter in the soil (because their loss directly affects the greenhouse effect);

- It is necessary to switch to environmentally friendly modes of transport and to stop using cars with internal combustion engines;
- A very effective way to combat the effects of greenhouses is to reduce waste. It is necessary to study the secondary use of resources, which eliminates or at least reduces the volume of methane-containing wastes.

All of the above requires billions of dollars of investment and decades of hard work. But we need to start today, now!

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