

Research on the Anthropogenic Impact on Climate Change

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ABSTRACT

The article is a presentation of the results of studies and calculations of climate parameters associated with anthropogenic thermal pollution of the environment. They indicate that the increase of atmospheric concentrations of carbon dioxide, methane, and nitrous oxide cannot be a cause of climate warming. The article provides information about the working principle of the natural mechanism of automatic maintenance of temperature climate parameters. The authors show that all of the gases molar mass of differs from the molar mass of nitrogen are the working bodies of the procedures for moving heat from the stratosphere to space. Water vapor is the only greenhouse gas, and to deal effectively with water vapor in the atmosphere is impossible. However, the work contains an assessment of the feasibility of some ways to assist the natural mechanism of removing heat to space. Some methods and tools of world energy development are suggested in the article. These methods could lead to a substantial reduction of anthropogenic thermal pollution of the planet.

KEYWORDS

Anthropogenic Thermal Pollution, Climate Control, Global Warming, Greenhouse Gases, Renewable Energy

INTRODUCTION

The purpose of the article is the scientific substantiation of the causes of climate change. The damage of the global economy from global warming is currently \$ 300 billion / year and is increasing every year. Scientists at the National Oceanographic Center in Southampton predicted minimal damage from global warming of \$ 1.4 trillion. The rise in temperature by 2 degrees can cost 3% of world GDP.

The risk that self-reinforcing feedbacks could push the Earth System toward a planetary threshold that, if crossed, could prevent stabilization of the climate at intermediate temperature rises and cause continued warming on a “Hothouse Earth” pathway even as human emissions are reduced. Crossing the threshold would lead to a much higher global average temperature and to sea levels significantly higher than at any time in the Holocene. If the threshold is crossed, the resulting trajectory would likely cause serious disruptions to ecosystems, society, and economies. Collective human action is required to steer the Earth System away from a potential threshold and stabilize it in a habitable interglacial-like state. Such action entails stewardship of the entire Earth System biosphere, climate, and societies and could include decarbonization of the global economy, enhancement of biosphere

DOI: 10.4018/IJEOE.2020040102

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carbon sinks, behavioral changes, technological innovations, new governance arrangements, and transformed social values (Steffen et al., 2018).

It is known that increasing concentration of carbon dioxide, methane and dinitrogen monoxide is responsible for climate warming. Initially CO₂ was indicated in the Kyoto Protocol, 1997, then it was considered in Report N°5 of the UN IPCC (IPCC, Climate Change 2014), as a greenhouse gas responsible for climate change, but in the 2015 Paris climate agreement three gases were claimed to be the reason of climate warming, specifically carbon dioxide, methane and dinitrogen monoxide.

The Russian Academy of Sciences several times pointed out that the Kyoto Protocol had no proper scientific justification (Osipov, 2004). The US National Academy of Sciences hesitated to recommend the US Congress to ratify the Kyoto Protocol. Since at the international level anthropogenic thermal pollution of the environment is not considered as a cause of global warming, the methods of eliminating the consequences of the impact of anthropogenic heat on climate parameters are not carefully discussed.

This situation can be explained by the lack of a scientific ground of the real cause of global warming and of the operating principle of the natural mechanism of automatic maintenance of the average air temperature in the atmosphere.

The scientific community should undertake measures aimed at the better understanding of climate self-heating issues by all members of the contemporary society and to be resulted at least in launching an international program on eliminating reasons of this phenomenon.

Different methods to prevent global warming by changing the Earth's radiation balance are discussed. In one method, aerosol particles are sprayed into the atmosphere, which absorb solar radiation and reduce the incoming solar radiation to the earth's surface. The disadvantage of this method is the death of plants on Earth due to the lack of ultraviolet radiation absorbed by aerosols (McNally & Nelson, 2018).

Another proposal is to remove the Earth from the Sun by changing the Earth's orbit, which may have unpredictable consequences for the Earth's ecology and climate.

In order to return the climate parameters to the equilibrium values of 50 years ago, it is possible to organize the production of generators using the energy of the environment with its cooling and the transfer of excess energy with respect to the equilibrium value in the radiation balance of the Earth in the optical range into open space (Vinogradov & Strebkov, 2018).

Though the Paris agreement is harmful from the point of view of its potential impact on climate self-heating it ought to be kept and implemented at least in order to reduce the rate of acidification of the oceans and seas. A significant portion of anthropogenic carbon dioxide from the atmosphere, more than 10 billion tons per year, is absorbed by the oceans and seas. When absorbed by the seas carbon dioxide increases the acidity of the water which disturbs marine flora and fauna and reduces the productivity of the seas.

The structure of energy should be discussed when we manage to stop self-heating climate. At that time, there will be no room for traditional energy (nuclear, coal, oil and gas), since for avoiding the further climate overheating all anthropogenic heat to be produced by all energy branches should be transferred to the space, but it is an extremely difficult and expensive task. To save the Earth environment it is obligatory to rely on renewable energy sources, and also on Energy of Environment in which the energy source is free and widely available in the form of thermal energy to be taken from atmosphere or water of oceans, seas and rivers.

NATURAL MECHANISM OF HEAT TRANSMISSION FROM THE STRATOSPHERE TO THE NEAR SPACE

For understanding the natural mechanism of heat transfer from the stratosphere into space some knowledge related to substance temperature definition, thermodynamics, heat and mass transfer should be involved.

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