

Received: 25 July, 2022

Accepted: 01 August, 2022

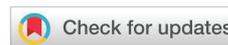
Published: 02 August, 2022

***Corresponding author:** Vladimir Arutyunov, Professor, Kinetic and Catalysis, N.N. Semenov Federal Research Center for Chemical Physics, Russian Academy of Sciences, Russia, Tel: ++7 (916) 2280725, E-mail: v_arutyunov@mail.ru; arutyunov@chph.ras.ru

ORCID: <https://orcid.org/0000-0003-0339-0297>

Copyright License: © 2022 Arutyunov V. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

<https://www.peertechzpublications.com>



Opinion

What should be the goal of our environmental efforts?

Vladimir Arutyunov*

Kinetic and Catalysis, N.N. Semenov Federal Research Center for Chemical Physics, Russian Academy of Sciences, Russia

The world's population has already reached almost 8 billion people and continues to grow rapidly. Environmental and climatic changes caused by human activity are continuously progressing; therefore, their impact on the further development of civilization has become one of the most acute and widely discussed problems. The main trend of the proposed solutions is to limit the production and economic activities of mankind, which is hardly realistic. As numerous historical examples show, this will inevitably lead to stagnation and then to the decline of our civilization. Many so-called «primitive» tribes, still remaining in remote parts of our planet, fit perfectly into their environment, but paid for it by a cessation and even degrading their development.

Humanity is not unique in its impact on the environment. Any biological species living in a certain ecological environment influence it to one degree or another, leading, in particular, to the suppression of competitors, the appearance of symbionts, and sometimes even to the destruction of the ecosystem hosting it.

In fact, from the moment of its appearance as a biological species, humanity has influenced the environment, and even at the earliest stages of civilization, this impact acquired a global character: as long ago as in the Paleolithic period, many animal species were completely exterminated, whereas Neolithic man changed the landscape and climate of vast regions. With the increase in the human population and the development of production capabilities, the anthropogenic impact naturally heightened and continues to do so. Only the disappearance of civilization can stop its impact on the environment.

The recently widely discussed attempts to influence climate processes by abandoning carbon energy and switching to renewable energy sources, reflected in the Paris Climate Agreement, are barely realistic. Firstly, because, as simple estimates of the global potential of renewable energy sources and global energy demand show, renewable energy is in principle unable to meet even the current energy needs of 8 billion people [1,2]. In this short note, there is no opportunity to discuss in detail the growing doubts about the role of the anthropogenic greenhouse effect in the observed climatic processes and the practical possibilities of managing it. The relevant arguments are detailed in [2,3]. More importantly, the thermal balance of the Earth is determined not so much by the type of energy sources used as by the total rate of energy production and, accordingly, its dispersion into the environment. For example, the global changeover to “environmentally friendly” and renewable solar energy is expected not only to entail several challenges, such as the environmental degradation of huge areas of the Earth's surface, the absence in the Earth's crust of the necessary resources of many chemical elements necessary for the production and updating of the corresponding fleet of sophisticated equipment, the inevitable contamination of the environment by hazardous chemical compounds during the operation and disposal of this equipment, but it will also lead to an increase in the albedo of our planet. Consequently, according to the Stefan-Boltzmann law, in order to preserve the thermal balance of the planet, the temperature of the Earth's surface will inevitably have to rise [2,3]. Similarly, in the future, the dispersion into the environment of “non-carbon” energy generated by thermonuclear fusion will also lead to a constant increase in the Earth's surface temperature as humanity's energy consumption inevitably increases.



This increase in temperature, as well as the change in the landscape and ecosystems of our planet, are inevitable consequences of the progressive development of civilization and can only cease with its disappearance. This is an inevitable consequence of the laws of development of the Universe we observe. As any natural system becomes more complex, counteraction to entropic processes occurring in it requires an increase in the flow of energy circulating in it and, accordingly, leads to an increase in the flow of energy dissipated into the environment. Our Civilization, which is the most complex and progressive of the natural systems known to us, is no exception in this regard. Therefore, the energy consumption of mankind as it develops will continue to grow in the future, even with the stabilization of the world's population.

So what then can and should be the goal of our environmental efforts, if in principle it is impossible to prevent either an increase in the temperature of the earth's surface or a change in its ecosystems? Of course, it is necessary to boost our efforts in preserving those natural resources, including fossil reserves and bioresources that Nature has provided us with, in order to give us the necessary time to adapt to the upcoming changes. At the same time, it is necessary to prepare morally and technologically for the inevitable changes that will occur both in nature and in society, predict trends in changes in the most important parameters, and intelligently and economically direct our efforts and resources to be ready for

an adequate and timely response to them. Such measures could include the displacement of significant masses of people and industrial infrastructure to more favorable regions. It will still be less costly and more efficient than spending huge natural, industrial and intellectual resources on activities with far from obvious results, but most likely just useless.

There is hardly any doubt that our more advanced descendants will eventually find an adequate solution to these global problems. Our task is to leave them the maximum opportunities and resources to solve these tasks. Therefore, the most reasonable behavior, it seems, until a reasonable solution for the future coexistence of humanity and the environment is proposed, is not to waste our efforts and resources on obviously unrealistic goals.

References

1. Arutyunov VS, Lisichkin GV. Energy resources of the 21st century: problems and forecasts. Can renewable energy sources replace fossil fuels? Russ. Chem. Rev. 2017; 86 (8): 777–804. DOI: <https://doi.org/10.1070/RCR4723>
2. Arutyunov VS. Is it possible to stabilize the Earth's climate by the transition to renewable energy? Eurasian Chem.-Technol. J. 2021; 23: 2; 67-75. <https://doi.org/10.18321/ectj1076>
3. Arutyunov VS. The Concept of Sustainable Development and Real Challenges of Civilization. Herald of the Russian Academy of Sciences. 2021; 91: 2; 102–110. DOI: 10.1134/S1019331621020027

Discover a bigger Impact and Visibility of your article publication with Peertechz Publications

Highlights

- ❖ Signatory publisher of ORCID
- ❖ Signatory Publisher of DORA (San Francisco Declaration on Research Assessment)
- ❖ Articles archived in worlds' renowned service providers such as Portico, CNKI, AGRIS, TDNet, Base (Bielefeld University Library), CrossRef, Scilit, J-Gate etc.
- ❖ Journals indexed in ICMJE, SHERPA/ROMEO, Google Scholar etc.
- ❖ OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting)
- ❖ Dedicated Editorial Board for every journal
- ❖ Accurate and rapid peer-review process
- ❖ Increased citations of published articles through promotions
- ❖ Reduced timeline for article publication

Submit your articles and experience a new surge in publication services (<https://www.peertechz.com/submission>).

Peertechz journals wishes everlasting success in your every endeavours.