

CLIMATE CHANGE – IN THE AIR AS IT IS ON EARTH

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Abstract

This article is based on a scientific report made by the Intergovernmental Panel on Climate Change of the European Commission. The information in the report shows that global warming is still ongoing and its effects are becoming clearer from year to year. It is good to know these things, but it is important to understand the causes: people are the main cause of climate change; less ice means more heat and the growing level of carbon dioxide in atmosphere has bewildering effects on creatures of seas and oceans. We bring into question the opinion of some political figures who are or have been skeptical about the warnings of scientists. In conclusion, the present paper doesn't aim to form a general opinion, but rather to stimulate a debate.

Key words: record heat, new epoch, albedo, acidification.

INTRODUCTION

Global warming is a topical issue, even though the debate has begun long ago. The Kyoto Protocol is an international environmental agreement. 160 countries negotiated this in December 1997, but in the last seven years, the debates on this issue have intensified (Kyoto Protocol, 2014).

We hear or read more often news whose main topic is "global warming", "greenhouse effect", etc. Not only articles have been written on this topic, people have passed to action. For example, the documentary films "An Uncomfortable Truth", an Oscar-winning film in 2007 for the best documentary film. Another example of this is the latest documentary film about climate change, "Before the Flood", film directed by Fisher Stevens and produced by Leonardo DiCaprio, a well-known environmental activist. This documentary film had record views for such a genre.

While the authorities of some countries or cities have resorted to the banning of motor vehicles for a few days and have asked people to use bicycles, long-term measures have been taken in other countries. The Netherlands has developed a plan that includes the extension of river canals as a way to prevent floods. In Chicago, decorative trees have been replaced

with species that are adapted to warmer climates. The United Kingdom has planned to lift the height of the flood control barrier that protects central London by 30.5 centimeters to prevent possible flooding caused by the future increase of the Tamisa flow (Vârlan, 2011).

ANALYSIS

Scientists affirm that we are entering a new geological age. This is due to dramatic changes - massive floods, more and more hurricanes, heat records, fires and droughts. Apparently we move from *Holocene* to *Anthropocene* and even if we like change, the latter is an age where people are the main drivers of change on the planet.

All of these climate trends that we do not like to hear have been predicted by scientists decades ago and have now become reality.

Although the Earth has been constantly heated for more than 100 years, with the increase of pollution by the CO₂ that wrapped the planet with a gas curtain with a heat-catching effect, one aspect is not clarified yet: the second industrial revolution that took place at the end of the nineteenth century as a result of which industrial branches such as the electrotechnical, chemical and automotive industries have developed has not been after all such a

beneficial event? We believe that both the first industrial revolution, at the beginning of which James Watt invented the perfected steam engine, and the second revolution were favourable to evolution.

We do not like the fact that a small change in Earth's average temperature produces a dramatic climate change as we see the signs of warming everywhere, from temperature monitoring, satellite measurements to news stories about the melting of ice caps. For example, in the United States, new record temperatures are more frequent than regular and there was an unprecedented peak in hot nights during the heat waves (Cutting, 2016). Such information we can access on a daily basis makes us aware of the advanced stage of global warming.

Research has shown that the albedo of the Arctic region may be declining much faster than it was estimated just a few years ago. A paper published in the Proceedings of the National Academy of Sciences (Pistone, Eisenman, Ramanathan, 2014) argues that the percentage with which the Arctic region fell between 1979 and 2011 is 25%.

The effects of global warming are also visible in the aquatic environment. CO₂ bubbles rise from volcanic venting on the seabed and dissolve to form carbonic acid. Interestingly, carbon dioxide is relatively weak, we humans always drink it in carbonated drinks. However, carbonic acid accumulated in a sufficient amount makes the seawater corrosive. Marine biologist at the University of Plymouth, Jason Hall-Spencer, says that when we enter the high CO₂ area, nothing can bear it (Kolbert, 2011).

Hall-Spencer studied the sea around Castello Aragonese, assessing the properties of the water and monitoring the fish, corals and molluscs that live, and in some cases dissolving there. The barnacle piles formed a whitish strip at the base of the rocks hit by the waves. "The barnacles are very strong," says Hall-Spencer, but curiosity is that they were lacking where water was the most acidified.

However, in 2003, Vladimir Putin told to an international conference on climate that, for Russians, global warming would mean "less spending on fur clothes," while agricultural specialists said "our cereal production will grow, and we thank God for that". Putin

believed at the time that there was no global warming, that this is a fraud to limit the industrial development of several countries, including Russia. He also said, "Climate is a complicated system and so far the evidence presented for the need to fight global warming has been rather unfounded". Although in 2003 the evidence presented for the need to fight global warming did not convince Vladimir Putin, in 2004 Russia ratified the Kyoto Protocol.

Al Gore, former US Vice President of the United States during Bill Clinton's presidency, presents in his book "An Uncomfortable Truth" (Gore, 2007) ten prejudices that circulate about global warming, including: it makes no sense to worry about CO₂, because many things can affect the climate; Cities keep the heat, so the warnings of scientists have nothing to do with greenhouse gases; Global warming is a myth, because temperatures do not grow everywhere.

CONCLUSIONS

We are witnessing the climate change that is happening now.

The atmosphere tends to maintain the warming of the planet due to CO₂ pollution. So the Earth will not stop heating until the pollution stops. We cannot reverse the heating, but we can stop it.

One of the measures that can be implemented to slow global warming is to reduce energy consumption. By reducing energy consumption, the load on thermal plants is decreasing. Another measure is alternative energy that aims to reduce CO₂ emissions. Solar, wind and wind are recommended because they are not based on combustion technology, but they also have some drawbacks: the capture of solar energy is cumbersome, the currently exploitable hydraulic energy is limited, and wind power is only available in certain areas.

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