

The fact of human impact on the geological processes and associated global ecological changes has been recognized already. But scale of this impact is not realized yet, which cause increase in speed and in power of the natural's processes manifold and sharp increase of natural and technogeneous disasters. Geological processes require incomparably much more energy to change their natural energy balance than is conceivable from scales of direct human impact. We did not realize previously that all kind of human activities made impact on geological processes in direct or indirect way. The ecological problems have turned out to be much more sensitive than they were assumed before and even relatively small impacts can cause a trigger amplifying effect on the natural processes.

Conventional views of the Earth's ecological problems and approaches to solving are based on models of the Earth as an isolated, self-regulated, independent body. We propose a more holistic view where the Earth is considered a part of an entire system, in constant energy exchange with its containing environment, Space. Uncontrolled human activity over many years has caused disturbances to the Earth's energy system and to its natural interaction with the containing environment. Specifically it has led to increase in energy absorption from the environment and decrease in its energy release. It has resulted in constant increase of the Earth's energy state, its natural stability and sensitivity. On this basis to understand the role of human impact on geological processes we have come to a different view on global climate change and an answer to the question – where and how did this vast scale of required additional energy associated with these processes come from? The majority of the energy of the catastrophic and strongest earthquakes in the 20th century happened in the period of just 20 year between 1945 and 1965, the period, when the most powerful nuclear and thermonuclear test were carried out on the surfaces. Moreover, the trend of the strong events with depth over 100 km shows the sharp increase since the late 1960, since, the start of the underground nuclear tests.

And the same trend with the events with depth over 400 km. All this could happen in the natural course of geological processes, but it requires incomparably much more geological time to happen. In the other side it explains why the countries which done in last 50-60 years nuclear tests ecologically suffer more: the damage increased in 150-200 times in last decade. The current view of the “Greenhouse Gas” effect and emission of CO<sub>2</sub> as the main cause of global warming do not consider the full spectrum of associated abnormal changes. Our approach to the climate changes and to solving the ecological problems are based on the discovery of seismic noise emissions with unique characteristics during the earthquakes preparation period and new understanding of the physics of the source of earthquakes. That has led to development of criteria for the diagnosis and control of the stress state of Earth media. The earthquake source mechanism is acting to an energy pump, constantly absorbing energy from the ambient medium and less released and thereby increasing its intrinsic energy.

A self-sustained oscillation system is created between the earthquake source and the energy field of the Earth, which eventually results in the earthquake's main shock. According the results of our studies the earthquake source does not need the same scale of energy to be activated as released during an earthquake. A trigger effect is enough to change the balance of energy exchange between seismic source and the Earth. It's proven by monitoring of seismic noise in many dynamic and non-dynamic zones that behavior of any tension medium has the same pattern. Our planet has come to such a state of excitation that even relatively minor impacts at one location can cause destructive effects far away and within all of the earth's spheres. Probably, the Earth excitation system have already come to self-sustained oscillation phase. This is the main cause of increased temperatures on the planet and ecological problems. Similarities between the Earth excitation mechanism and development of the earthquake source lead to the conclusion that changes in the Earth's energetic balance should make, in its turn, significant impact on the surround environment – the Space. This phenomenon is reflected by vast number of space abnormalities, which have been observed in last several decades. The most important among them – unusual Solar activity. These lead us to the conclusion that everything in nature is related to each other and impact each other, regardless of the sizes of bodies involved and distances between them.

**The Key point of our results is holistic view on induced disturbance of energy exchange between the Earth and its containing environment as the main cause of the Climate Changes, including the increased temperature on the planet. Thus, there is a necessity to create a global geophysical system: to monitor the global geophysical condition; to detect the critically disturbed arias; to conduct measures for reduction of these disturbances and restoration of natural interactions.**