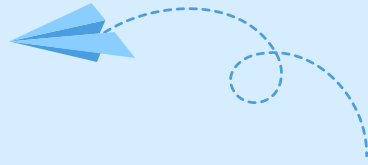




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Global Warming

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Global Warming



| Introduction

Recently, we more often can observe the calendar dates of the seasons shift. In a few decades, Europe was exposed to the invasion of unprecedented snowfall. In winter, there can be prolonged rainfalls. The sudden warming becomes the reason for rapid snow melting, rivers fall out of banks, which usually leads to flooding of many areas. Floods are not the only outcome of the enormous damage to property, the other consequence of the global warming is victims among people. At the same time, in the western hemisphere in the U.S. and Mexico, the unbearable heat was brought down in summer, which was accompanied by severe thunderstorms and powerful tornadoes. The weather seems crazy. In different parts of the world, it is rampant in its own way. Increasingly, people began to wonder why this is happening. What is the cause of the violations, which allowed disrupting of the climate system of the planet? One answer is that the climate change is happening due to the global warming.

| What is Global Warming?

Nowadays climate change is the most important environmental problem. It can cause a variety of phenomena such as sea-level rise effects and changes of the local climatic conditions, which can affect the socio-economic development of many countries. There is no doubt that global warming may cause unexpected processes in the environment.

Even a slight change in radiation balance can provoke the way how heat is distributed by winds and ocean currents. This can greatly affect the existing climatic conditions and lead to unintended consequences. As a result, the world's population and most of its ecosystems can suffer from irreparable damage (Foltz, Frodeman, 2004).

The main mechanisms that ensure the stability of temperature on Earth are solar radiation and greenhouse effect. Greenhouse gases hold a significant share of thermal radiation after reflecting the solar energy from the surface of the Earth. Moreover, they create suitable conditions for life on Earth. Due to this, the temperature on Earth increases to 33°C. Without the greenhouse effect, the temperature near the Earth`s surface would not exceed even 18°C. However, during the years of industrialization, the content of greenhouse gases in the atmosphere has noticeably increased. During the last century, the temperature on our planet increased by 0.6°C (Hansen, 2000). This provoked the process of the so-called "greenhouse effect". Thus, the temperature of the atmosphere is increasing very fast each year. The main consequence of the global warming is glacier melting. Scientists predict that by 2100, the ocean level would rise by 50 cm and flood some low-lying areas. Other projected effects are natural disasters: droughts, floods, hurricanes, which, in particular, lead to the extinction of forests and individual species. In addition, the distraction of the ozone layer allows harmful radiation to reach the Earth, which afterwards creates the variety of diseases infecting people, animals and plants (Lomborg, 2010).

Thus, today many scientists still argue whether the global warming has been caused by the anthropological factor or is a natural process of the climate changes. Therefore the main question of the research is whether



the global warming is a normal phase that the Earth has been through before, or whether it is not normal phase and people should be alarmed.

| The Global Warming Issues from the Past to the Future

In the history of the Earth's climate, natural disasters and the nature anomaly were not unique. In the past, there have been more improbable weather events than there are today. Ancient chronicles testify that at the time of Ancient Egypt, Nile has been even frozen and the Black Sea at times was covered with ice. The Bosphorus frozed so much that the ice crust could not be moved by people. This occurred during the Little Ice Age (H1Y end of the 1st century). During this period, Greenland (called Vikings Green Earth because of the warm climate) was covered by ice, which still is so (Armstrong, Botzler, 2007).

As a result of global warming (in the transition from one climatic condition to another), the climate system comes in an unstable state. This condition causes extreme weather events (natural disasters). These include hurricanes, tornadoes, droughts, winds, heavy snow and frost, rain, hail, prolonged rains. Natural disasters cause great damage and a great loss of lives. Observations show that natural disasters occur more and more often nowadays. The climate system discourse also shows that it becomes more and more difficult to make predictions of the future disaster. This again confirms the fact that the climate is changing, and this change can take place as long as desired (Haugen, 2010).

According to many scientists (Haugen, 2010; Lomborg, 2010; Foltz,

Frodeman, 2004), if the tendency of global warming continues, it will lead to the change in the weather and increased precipitation, which, in turn, will lead to the rise of sea levels. Scientists have noted that the changes affect rainfall patterns. They estimate that in the U.S. and the former Soviet Union within the last 30-40 years, the amount of rain falling is 10 percent more than in the past (Lomborg, 2010). At the same time, the amount of rain falling has decreased over the equator by ten percent. A further change in the system will have a huge impact on agriculture by shifting cultivation areas in the northern parts of North America and Eurasia. The most favorable conditions for growing crops will prevail in the agricultural regions of Russia, and heavy precipitation will fall in North Africa, where drought continues from the 1970s. In addition, higher temperatures will increase evaporation from the ocean surface. This will lead to the increase in rainfalls by 11 percent (Battisti, Naylor, 2009). The consequences of climate change will be felt in the North and South Poles. Scientists have calculated that the 10-degree increase in temperature will raise sea levels by 5-6 meters, which will lead to flooding in many coastal areas around the world (Foltz, Frodeman, 2004).

| Reasons for Global Warming

There are several reasons for global warming. Scientists divide them into two big groups: the reasons that are caused by the natural process of climate change, which is due to the general inevitable and uncontrolled processes in the Earth, and the human, or anthropological factors.

NATURAL PROCESS OF CLIMATE CHANGE

As one of the reasons for global warming, scientists mention the natural

process of ocean influence. The world ocean is a huge battery of solar energy. It largely determines the speed and direction of the ocean warmth and air masses on the planet, which in turn, greatly affect the Earth's climate. In addition, there are huge layers of dissolved carbon dioxide (about 140 trillion tons, which is 60 times greater than in the atmosphere) in the ocean and a number of other greenhouse gases. As a result of certain natural processes (e.g. climate change or ocean volcanism), these gases may be released into the atmosphere, significantly affecting the Earth's climate. These processes are easily explained: if warming increases evaporation of water vapor (which is also a greenhouse gas) from the ocean surface (Armstrong, Botzler, 2007).

Another natural reason for global warming is solar activity, which changes the angle of the Earth's axis and the Earth's location in the solar system. Therefore, even small changes in the activity of light or a slight change in the angle of inclination of the Earth can significantly affect the planet's climate system. It is likely that the observed global warming is caused because of another increase in solar activity, which in the future may happen again (Miller, 2011).

ANTHROPOLOGICAL FACTOR

The main anthropological factor is known to be carbon dioxide emissions that are mainly produced by large factories. Carbon dioxide emissions make up over 50% of the general volume of all harmful emissions into the environment (Dyurgerov, Meier, 2005). The increasing level of concentration of such gases in the atmosphere destroys the ozone layer and causes the appearance of "ozone holes" (Lomborg, 2010). Chemicals deplete the ozone layer and cause global warming, pollution, acid rains and other adverse effects of air pollution. Today`s industry is the main

enemy of the environment. Greenhouse gases such as carbon dioxide, methane and nitrogen dioxide (the main factories' emissions) that are evolved during the combustion of coal, natural gas and oil are the main reasons for heating of the atmosphere by the Earth's surface. Carbon dioxide (CO₂) is the most significant one, because it is responsible for 80% of thermal pollution. Today the level of the atmosphere's CO₂ concentration has the highest level in the last 420.000 years (Lomborg, 2010). The second reason is deforestation. The well-known fact is that oceans and forests absorb carbon dioxide. If fewer forests can absorb it, more emissions will be in the atmosphere. Over the past 10 thousand years, the man has destroyed about two-thirds of all forests on the planet (Haugen, 2010).

Thus, in the 1920s, much forest was destroyed in England 95%, in France and Spain from 80% to 90%, in Finland and Sweden 50%. The third reason is emissions of the gases produced by all electrical appliances. Even the modest house refrigerator produces gases, which cause the greenhouse effect. These gases are known as chlorofluorocarbons (CFCs) and are used for refrigeration, solvent cleaning, foam blowing, air conditioning, aerosols and fire protection, and to produce some products used in the electronics industry. Some processes of the cement manufacturing industry also act as one of the reasons for the greenhouse effect (Spencer, 2010).

| Conclusion and Recommendations

To conclude, although scientists named different theories concerning the reasons for global warming, the most reasonable seemed to be the human factor. As even if to take into consideration the fact that climate on the Earth can be changed by nature, humans contribute greatly to the speed of this process. As a result, those changes that could occur naturally within thousands of years, due to the anthropological impact occur now.

Therefore, in order to slow down global warming process, the following things should be done. First of all, the usage of alternative sources of energy is not a new invention today. The major pollutants of the environment are thermal power plants. They provide people with heat; however they are the main producers of CO₂. The usage of solar, wind and water plants instead will reduce amount of CO₂. Using solar energy can be useful in several aspects: decrease of the air and water pollution, reduction of fuel imports, replacement of nuclear fuel. Secondly, recycling can solve the problem of deforestation. According to the scientists, one hectare of forests absorbs around 120-280 kg of carbon dioxide and provides 180-200 kg of oxygen (Schneider, Ganopolski, Rahmstorf, 2006). One tree of an average size produces enough oxygen for three men. One hectare of pine forest absorbs 40 tons of dust a year. However, more and more trees are cut down each year. The solution is the recycling system that can save forests. The importance of recycling can be judged from the statistics. If the U.S. recycles only 10% of the wasted paper, greenhouse gas emissions will be reduced by 1.6 million tons. Thus, there are two main solutions: the usage of alternative sources of energy and the recycling system (Spencer, 2010).



Therefore, the issue of natural environment as corporate responsibility should be introduced. Thus, top-level managers should always consider the risks and effectiveness of the strategy of the environmental and labor protection. Another important thing is the improvement of the environmental and labor protection through the usage of advanced control systems and goals setting. Corporate responsibility is an important issue in business.

