

ALTERNATIVE FUELS AND CLIMATE CHANGES.

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Abstract: This scientific article discusses alternative fuels and their use. Their impact on human health is described, and how harmful they are to the environment in use. There is also some comparison of alternative fuels, their disadvantages and advantages, as well as their environmental friendliness.

Keywords: hydrogen, ethanol, biofuels, water vapor, liquefied natural gas, liquid nitrogen.

Аннотация: В данной научной статье рассматриваются альтернативные виды топлив и их использование. Описывается их влияние на здоровье человека, и насколько они вредны для окружающей среды в использовании. Также приведено некоторое сравнение альтернативных топлив их недостатки и преимущества, а так же их экологичность.

Ключевые слова: водород, этанол, биотопливо, водяной пар, сжиженный природный газ, жидкий азот.

In my opinion, this topic is quite relevant these days. The problem of air pollution has always been a very important problem, but fortunately solved nowadays. And it is solved extremely simply. By switching to alternative fuels, namely gas.

The main source of atmospheric pollution in Russia is vehicles with internal combustion engines. According to the Ministry of Health of the Russian Federation, about 90% of the total amount of pollution is accounted for by road transport. Scientists have found that one car absorbs an average of 5 tons from the atmosphere. Oxygen, while emitting 1 ton of carbon monoxide, 40 kg. nitrogen oxides and almost 200 kg of various carbons.

Now I will tell you a little about the ecology of the Kaliningrad region. For a long time, Kaliningrad has been included in the list of Russian cities with a significant level of atmospheric pollution . But now he is removed from this list. Moreover, at the moment, the Kaliningrad Center for Hydrometeorology and Environmental Monitoring has concluded that the quality of atmospheric air has improved in the city, and the amount of harmful substances in the atmosphere is decreasing.

According to statistics, in the Kaliningrad region , the volume of emissions of pollutants into the atmospheric air decreased by 25.6% over the year, this is the largest decrease in the level of atmospheric pollution among all regions.

Table 1 shows a slight increase in pollutants, namely carbon monoxide and hydrocarbons in 2015, a slight decline of approximately 5% began in 2016, but by 2017 a noticeable decline in all types of pollutants by more than 10%.

For a more visual overview, we will construct a diagram of Fig. 1, where the increase and decrease of polluting elements can be more accurately seen.

Now let's talk about alternative fuels.

Let's take gasoline fuel and gas fuel as an example. Let's consider the pros and cons of each of them.

Liquefied petroleum gas propane-butane for more than 50 years is a worthy alternative to gasoline. Despite minor differences in the operation process, liquefied petroleum gas is extremely similar in its characteristics to gasoline.

Gas fuel burns more completely than gasoline, and based on this, the concentration of carbon monoxide in the exhaust of a car on gas is several times lower than in the exhaust of a gasoline car. The most dangerous thing for human health is the emissions of hydrocarbons, or to be more precise, the products of their oxidation. An engine running on gasoline emits oxidizing substances relatively quickly — ethyl and ethylene, and a gas engine, in turn, is methane, which is the most resistant to oxidation of all the limiting hydrocarbons.

In today's developing world, progress takes place every day in the field of science and technology. Of course, technical development makes our life easier, but we need to think about how we achieve all this. After exhausting natural reserves for the sake of satisfying human needs, we inflict great damage on nature, as a result of which there are various ecological problems that affect not only a certain region or state, but the whole world.

Each state in accordance with economic development and geographical location has its own environmental problems. Unfortunately, the Republic of Uzbekistan is not an exception. Today, independent Uzbekistan is a large industrial and agrarian state with further development of machine building, energy, chemical, food industry and transport complexes, which will come to the fore. The development of production negatively affects the social-ecological situation in the republic.

Protection of nature and environmental problems facing the Republic, the following:

1. Problems of nature protection in Angren-Almalyk Chirchik, Fergana-Margilan, Navoi and other areas where large regional industrial complexes are located. The socioecological situation in these regions is not very good. Since the

various gases and waste generated in industrial centers lead to a deterioration in the state of the environment.

2. Environmental problems in the agro-industrial complex.

3. Another problem is the pollution of industrial wastewater from pesticides and mineral fertilizers.

4. Protection and reproduction of flora and fauna, expansion of the network of reserves and national parks [4].

Currently, most production processes use open technological cycles associated with the release of solid particles and waste gases into the atmosphere, the chemical composition and concentration of which are determined by the features of production. Sources of industrial dust are technological processes, such as grinding, grinding, sieving, etc. [1, p. 210]. Because of these emissions, various diseases such as iodine deficiency in the body, bronchial asthma and other oncological diseases occur. For the prevention of the above diseases, special medical centers are being opened for workers who work in dangerous departments of the enterprise are paid additional wages for harm to their health.

The main negative effects of air pollution in urban areas:

— Reduction of solar ultraviolet radiation to 30%, decrease in the duration of sunshine to 15%;

— increase in comparison with the background of gaseous impurities by a factor of 5–25 in the condensation nuclei of water vapor molecules by a factor of 10 or more, the total mass of dust is 10 times or more;

— increase in comparison with the background of aerosol impurities by 100–1000 times;

— increase in cloud and fog 30%, fogs in winter — by 200%;

— the temperature of the daily minimum is 1.0–9.0 ° C higher;

— wind speed: the annual average is 20–30% less, strong gusts — 10–20% less, sewers — 5–10% more;

— the content of toxic heavy metals and carcinogenic substances in aerosols of technogenic landscapes of urbanized areas is increased by an average of 4–5 times with background;

— increased risk of diseases of the population with diseases, the nature of which depends on the type of pollutant (allergy, respiratory diseases, cardiovascular system, etc.);

— increased wear of materials of structures, structures, monuments of architecture due to the impact of various types of chemical, physical and chemical and microbiological corrosion;



— reduction of areas covered by vegetation, diseases of trees; — local climate change, biochemical circuits of the main components of the atmosphere (water, nitrogen, sulfur, carbon), an increase in the number of rains, the predominance of acid precipitation;

— long-term consequences associated with genetic changes. [2, p. 131]

In addition to air pollution in Uzbekistan, there is another ecological problem that affects the whole of Central Asia — this is the tragedy of the Aral Sea. Over the past decades, the water level in the sea has greatly decreased. By now, the Aral Sea has almost completely disappeared as a result of human economic activity. In the coastal areas of the Aral Sea, atmospheric precipitation decreased several times. Their average value is 150–200 mm with a significant unevenness in the seasons. High evaporability noted (up to 1700 mm per year) with a decrease in air humidity by 10% [3, p. 55].

As you know, President of the Republic of Uzbekistan Sh. M. Mirziyoyev delivered a speech at the 72nd UN Assembly, where he raised the issue of the Aral Sea: «Uzbekistan supports the draft conventions on the use of water resources in the Amudarya and Syrdarya river basins developed by the UN Regional Center for Preventive diplomacy. I would again like to draw your attention to one of the most acute environmental problems of our time — the Aral catastrophe.... Overcoming the consequences of the desiccation of the sea requires today the active consolidation of international efforts. We support the implementation in full of this year's special UN program to provide effective assistance to the population affected by the Aral Sea crisis» [5].

The salvation or annihilation of this world is only in our hands. After all, for as much as a thousand years, we have used many resources of nature. But what was given in response? The destruction of the ozone layer, depletion of natural resources, global warming, the disappearance of many species of animal and plant life — that's what we give to nature! And this is only the beginning. Let's save our Earth together!

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