

Studying the Effect of Gas Processing Plants' Waste on Human Health in Uzbekistan

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ABSTRACT

The article analyzes the emissions of industrial enterprises in our country and the negative impact of these wastes on human health.

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One of the largest sectors of the Uzbek economy is industry, which employs 1/8 of the employed population. Industry is multi-sectoral. Uzbekistan has more than a hundred branches. 40% of fixed assets are created in industry, 17% of GDP is generated in industry.

Electricity, gas, oil, coal, gasoline, steel, automobiles, agricultural machinery, electric motors, accumulators, cables, excavators, spinning machines, aircraft, mineral fertilizers, sun odorous fiber, sulfuric acid, various building materials, fabrics, flour, cottonseed oil, rice, clothing and other food products. The role of industries in industry varies.

Among the industries, the chemical and petrochemical, mechanical engineering, electronics, energy, metallurgy, light and construction materials industries are developing rapidly. The role of the fuel and energy complex in the development of industry is special. It includes gas, oil and refining, coal mining and electricity generation.

The share of this complex in the country's industrial production is 26.8%. Uzbekistan is one of the 10 largest gas producers in the world. In the current new economic environment, the search for gas fields in the country and the export of processed products from existing ones is aimed at strengthening the country's economic independence.

In particular, the share of the gas industry in the balance of fuel produced in the country is 87.2%. The main regions where the mining industry is located are Fergana, Surkhandarya, Bukhara and Kashkadarya regions, as well as the Republic of Karakalpakstan.

At present, we have a number of scientific developments in the development of deposits of natural gas in complex geological strata (at depths of 3500 m and below, pressure 600 (up to the atmosphere) and

containing aggressive compounds such as hydrogen sulfide (up to 6%), carbonic acid). have to solve technical problems.

The first stage of the Mubarek Gas Processing Plant, the largest in the country, was launched in 1972, which created opportunities for gas purification in mixtures. At present, the Mubarek refinery, Fergana refinery and Shurtan gas complex annually produce about 100,000 tons of liquefied gas in the country. These figures are certainly gratifying, but in the current rapid and advanced environment, the description of various harmful and toxic gases emitted from oil and gas products, the compounds formed by their hydrocarbons and the impact of emissions on living organisms, especially human health. has a negative effect.

The fact that air pollution in the cities and industrial areas of the Republic of Uzbekistan poses a serious threat to the health of our population can be seen in the development and rejuvenation of certain diseases, such as respiratory diseases, allergies. It is well known that the level of air pollution in our country is calculated. According to him, the amount of emissions into the atmosphere in 2020 amounted to 2 million 225 thousand tons, which is 7% less than in 2018 and 2019 (155.0 thousand and 150.0 thousand tons). The World Health Organization estimates that the annual death rate from air pollution in Uzbekistan is 81.1 per 100,000 people. In most European countries, the figure is less than 40, in Romania 59.3 and in Bulgaria 61.8.

Therefore, it is no exaggeration to say that one of the most important tasks is to reduce the emissions of carbon, nitrogen compounds, methane and other gases and dust by 1.5 times in large and industrial cities of the country. This problem is more common in our big cities. Their vehicles, industrial facilities, and the population's improper utilization of household waste - the toxic substances generated by incineration - pose a significant threat to the ecosystem. As of July 1, 2021, there are more than 3.0 million vehicles in use in the country for the transfer of at least 50% of public transport to gas-cylinder fuel, electricity and other alternative fuels, of which 36.0 percent for gasoline, 4.0 percent for diesel, and 60.0 percent for gaseous fuels.

The high level of pollutants is due to the growth of production, and the second is the obsolescence of industrial dust and gas treatment equipment. According to the analysis, more than 60% of the existing 6,500 dust and gas cleaning equipment in the country have been in use for more than 10 years and are obsolete. Especially in Samarkand (77%), Surkhandarya (79%), Bukhara (82%), Khorezm (88%) regions there is dust and gas cleaning equipment, which has been used for more than 10 years.

On average, about 6.5 million tons of emissions per year are generated in enterprises and organizations in the country, of which 5.6 million tons (or 87.3%) are sent to ChGTU, of which 5.5 million tons (or 85.2 per cent) were retained and neutralized. Of these, 4.6 million tons (or 83.6%) were disposed of. 0 thousand tons of pollutants are discharged directly without treatment. In accordance with internationally accepted practice, it is advisable to reform the existing system of air quality assessment based on the average concentration of pollutants. It is necessary to increase the number of stations for regular monitoring of air quality around cities and large industrial complexes, to repair them with modern equipment, to monitor PM 10 and PM 2.5.

The interaction of hydrocarbon components with hydrogen sulfide in the human body takes many forms. First of all, the human central nervous system is injured. Hydrocarbon poisoning damages the midbrain, the highest center of the autonomic nervous system. Hydrocarbons affect the cardiovascular system, as well as hematological parameters (decreased hemoglobin and erythrocytes). It can also affect the liver's ability to function.

In all sequences of technological processes, hydrogen sulfide is likely to be released and released into the environment. Hydrogen sulfide is a highly toxic nervous system toxin and can be fatal if ingested at a concentration of 1000 mg / m³. Constant exposure to hydrogen sulfide can cause damage to the nervous system, cardiovascular, nutritional and respiratory organs. Human sensation of hydrogen sulfide in the atmosphere begins when its concentration in the air is in the range of 0.012-0.03 mg / m³. However, these concentrations also affect the visual system.

The harmfulness of carbon monoxide for the human body is determined by its high ability to react with hemoglobin to form carboxy-hemoglobin. The formation of carboxy-hemoglobin affects the function of

oxygen transport, restricts the flow of oxygen to the tissues and causes various forms of central nervous system diseases. As a result of breathing from it, atherosclerotic processes intensify.

The daily allowable concentration of carbon monoxide in atmospheric air is 1 mg / m³. The maximum acceptable value per day is 3 mg / m³.

Nitric oxide is one of the gases that affect the body, that is, it causes respiratory diseases. Its dangerous concentration for short-term respiration is 200-300 mg / l. Nitric oxide at a concentration of 15 mg / m³ is odorless and irritating to the eyes, the permissible concentration is set at 3 mg / m³.

Oil and gas raw materials and chemical carcinogens released during its processing can also cause cancer. Their permissible values in air should not exceed 0.1mg / 100m³.

In conclusion, it should be noted that the impact of gas processing plant waste in Uzbekistan on human health is very high in the current situation. the program must be followed.

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