

OIL INDUSTRY: ENVIRONMENTAL ISSUES

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Oil production and refining are among the most polluting industries due to the release of large amounts of highly toxic substances. Therefore, it is necessary to involve specialists in solving various environmental problems, as well as to form the environmental consciousness of people.

Every year the environmental situation in the world becomes more and more tragic, and the number of environmental disasters is inevitably growing. One of the serious polluters of the environment is the oil industry.

Russia is a world leader in oil production, and therefore pollution of the natural environment with oil and related pollutants is a pressing environmental problem in many regions of Russia. In addition, the scale of the oil industry's impact on our country's environment is of very serious concern.

The most common and dangerous consequence of the oil industry is pollution by petroleum products, which is usually associated with oil production and refining. Other environmental impacts of the oil industry include greenhouse gases, acid rain, poor water quality, groundwater pollution, loss of biodiversity, etc.

Based on the results of the IX rating of openness of environmental information of oil and gas companies, a deterioration in the industry average environmental impact indicators for 2022 was revealed. In particular, the trend towards an increase in the volume of combustion of associated petroleum gas and an increase in greenhouse gas emissions continues [1].

The goal of our work was to evaluate activities and technologies at the enterprises of Russian oil companies and identify the most effective measures to improve the environmental situation.

We analyzed data on the environmental policies of various enterprises in the oil and gas industry [2]. It was revealed that the main directions for improving the environmental situation in the oil industry are:

- designing new equipment or upgrading old process equipment, the operation of which eliminates gas flaring and atmospheric emissions;
- development of special equipment for environmental protection measures (for example, in water purification processes during oil production, the use of electromagnetic discharges and air guns in the exploration of oil reserves, the use of bioreactors) [3-4];
- increasing the depth of oil refining to 85-90% (in 2022, the depth of refining was 83.9%);
- biological treatment using microorganisms capable of growing and exhibiting active biochemical activity in an environment with a high content of oil pollution, capable of biodegrading these substances [5];

- digitalization and standardization of high technology in the field of environmental safety;
- image environmental projects [4];
- introduction of economic methods for regulating environmental quality in the sphere of production interests of industrial enterprises.

In modern conditions, the level of man-made pressure on the environment requires the urgent “greening” of production. The mechanism for “greening” any production is described in the international standards of the ISO 14000 series. “Greening” of Russian oil companies will not only reduce environmental pollution, but also obtain clean raw materials, which will lead to an increase in the income of companies operating in this area.

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