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ENVIRONMENTAL PROBLEMS AND METHODS OF MANAGEMENT OF MANUFACTURING ENTERPRISES

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Abstract
There are two different approaches to technical innovation in the field of ecology. The first is that new technologies and processes minimize the cost of eliminating sources of pollution, and the second is that new technologies (the right option to approach the issue) ensure a radical elimination of the cause of real or potential environmental problems.
The focus on improving the environment is traditional, requiring consideration of direct costs. In recent years, a number of advanced companies have focused on taking preventive measures against pollution.

Keywords: Correlation, resource, raw materials, petrochemistry, oil, gas, portfolio, organochlorine, catalyst, organochlorine.

Introduction

Environmental policy, economics and innovation will strengthen the leading position of German chemical and petrochemical enterprises. Careful treatment of the environment allows the use of fresh and environmentally friendly raw materials. Accordingly, the final product is also environmentally friendly. Man always strives for good. So everything around him is useful and should not harm him. The chemical and petrochemical industries are major sources of environmental pollution. The chemical complex ranks tenth in terms of total emissions into the atmosphere, and second in terms of emissions into natural water bodies. The concept of sustainable development, approved in the last decade, requires the harmonious conduct of economic and environmental policies.
Environmental policy is being actively pursued in the economic strategies of developed countries and large companies. It includes a system aimed at the rational use, protection and restoration of natural resources in the country and abroad. This policy is pursued at the level of both the country and the companies that are committed to adhering to these standards in their development strategies. As a result,

the EU has recently tightened controls not only on product quality but also on its environmental friendliness.

Close integration of environmental policy, economy and innovation will allow Germany to strengthen its position as a leading supplier of products to the chemical and petrochemical industries. Accordingly, the final product is also environmentally friendly [1].

The standards of EN ISO 9001 and EN ISO 14001, which consistently control the production process and guarantee stability, are strictly followed in the chemical and petrochemical enterprises of Germany.

The introduction of ISO 14001 and its certification will allow the introduction of new ideas that increase the profitability of the competitive process, relatively efficient technological processes, reduce costs, and call for greater confidence in innovation [2].

The advantages of internationally recognized standards are well known. Participation in international tenders requires compliance with the technical requirements and standards included in the terms of the tender. Such international standards guarantee the creation of equal conditions for bidders.

In many cases, there is still a perception that environmental efficiency is associated with high costs, low profits and other indicators.

If we look at it realistically, we can see that there is a stable positive correlation between companies in terms of high environmental efficiency and profitability. Over the past decade, there has been a positive shift between environmental challenges and economic gains.

This is one of the most demanding laws for Germany from an environmental point of view, showing high economic growth.

An environmental management system can also help managers who are sufficiently interested in solving environmental problems related to the fate of their enterprise. The existence of environmental management is also important in protecting a company from legal liability.

Many leaders still do not fully understand how much environmental damage and other factors that damage the environment can cost. In general, about 91% of total losses occur due to shortcomings in the management system.

A well-designed system of environmental management allows you to find effective ways to reduce costs, encourage management and technological innovation decisions, and reduce product costs.

There are two different approaches to technical innovation in the field of ecology. The first is that new technologies and processes minimize the cost of eliminating sources of pollution, and the second is that new technologies (the right option to approach the

issue) ensure a radical elimination of the cause of real or potential environmental problems.

The focus on improving the environment is traditional, requiring consideration of direct costs. In recent years, a number of advanced companies have focused on taking preventive measures against pollution. One of these measures, called "resource reduction," is an attempt to reduce environmental impact and pollution by addressing the problem in the early stages of product development.

The concept of "continuous improvement" described in ISO 14001 allows for improvement at all stages of the life cycle.

Many German companies that have implemented the ISO 14001 standard have found many opportunities to save money, including increasing efficiency, reducing material and water consumption.

- Waste was reduced;
- Waste costs have been reduced from $ 72,000 to $ 24,000;
- Energy saving;
- Improved strategic planning.

Let us consider the solution of environmental problems in the chemical industry on the example of BASF [3].

The BASF group of companies is one of the largest international chemical corporations, founded in 1865 by Ludwigshafen. BASF is a leader in the chemical industry, with about one hundred and fifty industrial sites on various continents and supplying its products to 200 countries around the world.

The company's portfolio of offers includes oil and natural gas, chemicals, plastics, special chemicals, agricultural and fine chemical products. The total number of BASF employees is 95,000, and the company's sales in 2007 amounted to 58 billion. euro. The company produces more than 8,000 products from primary raw materials oil, natural gas, sulfur and others. The large amount of intermediates produced is not discarded, but is used as a raw material for other industrial products. BASF operates with raw materials and energy resources, various chemicals, agricultural products, consumer goods, including lacquers, paints, information systems and medicines. Since 1985, BASF has focused on environmental protection, safety and health. began to take action. These include:

- Does not take precedence over economic interests, security, health and environmental protection;
- Production of environmentally friendly products, their efficient use and waste disposal;

- Minimal impact on the environment in the production, transportation and storage of products;
- Assisting consumers in the use of products; constant development of science and technology to protect the environment and safety;

The Ludwigshafen site itself has about 350 workshops, which produce complex chemical products. They take samples from 43 locations inside and outside the site for environmental control (air, noise, water quality, soil). BASF waste disposal uses a special plant in Europe, where 200,000 tons of waste are processed in 8 furnaces each year. Here are a few examples from the firm's experience in catalytic chemistry and chemical technology.

BASF also produces catalysts for the oxidation of various exhaust gases. The use of such catalysts allows to significantly reduce emissions into the atmosphere. In recent years, the company has been developing new catalysts used in waste recycling in many cities around the world.

The efficient use of catalysts in the chemical industry is highly efficient, which not only reduces energy costs but also increases process selectivity. Currently, 80% of catalysts are used in various technological processes. Significant environmental impacts of intermediates can be seen in the catalyst in the production of acrylic acid.

Acrylic acid is effectively used in the manufacture of dispersions, varnishes, superabsorbents and other products. As a result of research over the past 25 years, the amount of unnecessary intermediate products has been reduced to 75%. Reducing the amount of waste also reduces energy consumption. An important semi-product in the production of vinyl chloride is obtained by oxidation of dichloroethane ethylene in the presence of hydrochloric acid and air. This process is accompanied by the formation of CO, hydrocarbons. It is advisable to use oxygen as an oxidant to reduce the amount of such gases. The water generated in the process was contaminated with organochlorine and it was decided to install an additional regenerator in the column to reduce its impact on the environment, which would eliminate chlorine-containing organic matter.

Cooling water was also used here, which was discharged to a pool near the port before the workshop was modernized. After the necessary engineering work was carried out, the ingress of organic matter into the seawater was completely prevented.

Some work has been done on production management, which has cost about 70 million marks.

Thus, BASF has always paid special attention to environmental safety in the production of its products. Demonstration and confirmation of these principles is the transition to ISO 14001 certification, in which the company focuses its activities on:

- Optimization of natural resource consumption;
- Compliance with environmental standards;
- Safe disposal of waste.

In addition to enhancing the company's reputation and attracting new partners, ISO-14001 certification allows BASF to operate effectively and increase the company's internal responsibility for environmental monitoring.
Thus, the sustainable development of Germany is explained by the interdependence of ecology and economy.

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