

INTRODUCTION OF ALTERNATIVE ENERGY SOURCES IN INDUSTRY

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Анотація

Машинобудівна галузь, як ключовий сегмент промисловості, відіграє важливу роль у формуванні економічного ландшафту. Однак, разом із своєю значущістю, вона несе на собі велику відповідальність перед навколишнім середовищем. Однією з ключових тенденцій в сучасній машинобудівній галузі є активне впровадження технологій, спрямованих на мінімізацію відходів, оптимізацію використання ресурсів та зниження викидів забруднюючих речовин. Дослідження цих технологій дозволяє нам не лише зрозуміти їх потенції, але й визначити можливості для покращення екологічної ефективності виробництва.

Ключові слова: машинобудування, відходи, промисловість, екологізація.

Abstract

The engineering industry, as a key industry segment, plays an important role in shaping the economic landscape. However, along with its importance, it carries a great responsibility towards the environment. One of the key trends in the modern engineering industry is the active implementation of technologies aimed at minimizing waste, optimizing the use of resources and reducing emissions of pollutants. The study of these technologies allows us not only to understand their potential, but also to identify opportunities for improving the environmental efficiency of production.

Key words: mechanical engineering, waste, industry, environmentalization.

Introduction

Mechanical engineering is a branch focused on the creation, development and production of machines, equipment and vehicle equipment. Mechanical engineering is a significant polluter of the environment due to large volumes of solid waste emissions, heat and smoke pollution of the air. This industry requires research and application of modern ecological approaches to minimize the impact on the environment with minimal loss of productivity and quality of the products themselves. In recent years, there has been a significant increase in interest in the development and implementation of environmentally friendly technologies in the machine-building industry. Production in the engineering industry can lead to emissions of various pollutants into the atmosphere. The main pollutants in this industry due to the various processing of materials include: nitrogen oxides, hydrogen sulfide and sulfur dioxide, volatile compounds, solid particles, carbon dioxide, etc. The list can also include the irrational use of energy and the non-targeted use of exhaustible resources, which does for the planet and humanity a potential danger.

Research Results

Renewable energy sources are sources based on processes occurring in nature, as well as the life cycle of the plant and animal world and the vital activities of human society. An example of renewable sources based on the processes of nature are the following: solar radiation, wind energy, hydropower, geothermal energy, tidal energy, biomass, low-potential heat of various environments (water, air, soil), etc. The environmental benefits of alternative energy have not yet been evaluated. If we take into account the damage to agriculture from acid rain, the costs of treating diseases due to environmental pollution with harmful volatile, liquid and solid substances, the costs of creating ash dumps and storage of spent nuclear fuel, then the cost of electricity from renewable sources will in many cases be cheaper than from energy based on fuel combustion.

Among the advantages of alternative energy there are:

- inexhaustibility of resources;
- absence of emissions of carbon dioxide and other harmful emissions into the atmosphere;
- preservation of the thermal balance of the planet and reducing the risk of increasing the greenhouse effect;

- availability of use (sun, wind) and the possibility of simultaneous use land for economic and energy purposes (power stations, heat pumps, damless hydroelectric power stations);
- possibility to occupy territories that are not suitable for use by the agricultural sector (construction of solar and wind power plants).

For the development of this branch of energy, additional motivation is needed for enterprises by means of public campaigns for financing, permanent ways of selling products, as well as expanding the construction of the corresponding infrastructure.

Conclusion

The development of alternative energy sources in the machine-building industry plays an important role in the formation of sustainable and environmentally friendly production that meets modern requirements. With constant research, additional incentives for enterprises, and rational use of resources, the climate change and the greenhouse effect can be reduced. Compared to a number of difficulties and problems associated with the transition to such energy sources, this step is not only necessary, but also strategically aimed at ensuring energy stability and preserving the environment for future generations.

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