

ENERGY AND ENVIRONMENTAL ENVIRONMENT

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Power engineering is the main driving factor for the development of all branches of industry, communal and agricultural, and serves as a base for increasing productivity and welfare of the population. It has the highest rates of development and scale of production. That is why the pace of scientific and technological progress and the improvement of working conditions are largely determined by the state of energy, and in all countries of the world it is given a great deal of attention. At the present stage of energy development, the problem of its interaction with the environment is very important. Ecological conditions of functioning of energy are connected with the unique scale of material and thermal interaction with the biosphere (atmosphere, hydrosphere, lithosphere). This is due to the fact that, consuming a huge amount of primary resources in the form of solid, liquid and gaseous fuels, thermal energy together with the production of electric energy and heat releases a large amount of waste in the form of gaseous and solid combustion products into the environment. According to the existing thermodynamic cycles of the TES, more than 60% of the potential energy of the fuel enters the environment: the physical heat that is lost with the waste gases, the heat of the heated water. In addition, electricity and heat generated at the TES and AES are also entering the environment in the process of their transmission and consumption. It should also be noted that in connection with the development of nuclear energy there was a change in the interaction of energy with the environment in the direction of reducing pollution of the environment by combustion products and ash-slag waste, but at the same time there were emissions of nuclear power plants, no less dangerous for the impact on the biosphere, than emissions TES. Since organic fuel is still the main source of electricity and heat production, significant costs of means and forces for the development and implementation of economically acceptable environmental protection methods are required to prevent the increase of harmful emissions. An important aspect of the interaction between energy and the environment is the ever-increasing reciprocal impact - the environment dictates the conditions for the adoption of technical solutions in the design of energy companies: the choice of type and unit capacity of energy equipment, the choice of the location of the TES, HES, AES, etc. It should be noted that the problem of environmental protection from harmful emissions of energy and other industries on its scale is both national and global, since emissions are unplanned. Therefore, special bodies have been established at the UN, MIREK and other international organizations to study, discuss, analyze environmental problems and conclude international treaties. Thus, at the present stage of the development of energy, the problem of its interaction with the environment is very acute, multilateral and requires special attention. This problem is especially acute in the energy sector of Ukraine, considering the current state and prospects, its development.