

ENERGY AND ENERGY SUPPLY
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Modern energy is a complex multi-level hierarchical structure designed to provide comfortable living conditions for the population, as well as the normal functioning of industrial enterprises, production and institutions. Only on the basis of a reliably and efficiently operating system of providing consumers of various levels with the necessary energy and energy resources, their normal functioning and development is possible. The political and economic independence of the state is largely determined by its energy security and independence. All this is associated with the "production" and "consumption" of energy, which are included in the general concept of "energy", defined by the transition of energy from one state to another. Identical in their physical essence, but differing in their ultimate goal and direction, they are the main generators of the energy chain. The latter, in turn, determines the essence and content of energy supply and energy consumption.

At present, various types of energy are known: thermal motion of microparticles that make up the working fluid; kinetic of the body itself as a whole (mechanical energy); gravitational, electric and magnetic fields; electromagnetic radiation; intranuclear. Some types of energy can be converted into others in strictly defined quantitative ratios, which are established by the general law of conservation and transformation of energy.

The variety of forms of energy existence, the property of their interconversion allows the use of various energy resources and energy carriers for the production and consumption of energy, determines their interchangeability. The energy value of resources, the efficiency of methods for their transformation, the degree of perfection of processes and installations, technological stages of energy production is ultimately determined by the utilization rate of the energy resource (in particular, the efficiency of the power plant). This necessitates continuous improvement of power generating plants, including thermal and nuclear ones, as well as their equipment, in order to increase the utilization rate of energy resources in the production of electrical and thermal energy.