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POTENTIAL FOR THE DEVELOPMENT OF ALTERNATIVE SOURCES OF ENERGY IN AGROINDUSTRIAL COMPLEX OF UKRAINE

In today's conditions of managing the agrarian sector of the economy, the problem of efficient use of energy resources in Ukraine becomes of increasing importance. This is due to the fact that in recent years there is a clear tendency to rise in price. Therefore, the search and use of alternative energy sources in the agro-industrial complex is very relevant today.

Based on the new energy policy, Ukraine attaches great importance to energy conservation. The importance of energy conservation is due to the fact that it retains significant hydrocarbon resources, saves consumers' financial resources, and reduces carbon dioxide emissions. The problems of the efficiency of using traditional energy sources in the agro-industrial complex in Ukraine are even more acute than in the world or in the EU. The reason for this is the outdated technology, the exhaustion of resource use of fixed assets for the production of electricity and heat. It is possible to change the situation by conducting an appropriate energy policy, improving the legal framework and attracting investment in the development of non-traditional types of energy sources in the agro-industrial complex of Ukraine.

Today, the socio-economic situation in Ukraine encourages the development of non-traditional types of energy sources (Fig. 1).

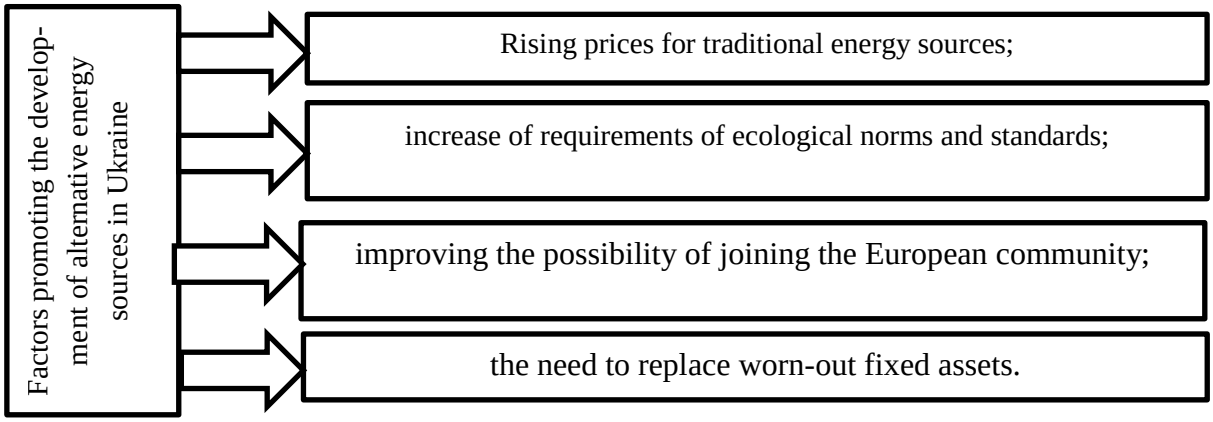

Fig.1. Factors promoting the development of alternative energy sources in Ukraine

Source: Formed by the author according to the results of the study

Among many alternative renewable energy sources, one of the most promising ones is bioenergy, which is based exclusively on the use of energy of

biomass - carbon-containing organic substances of plant and animal origin. The biomass potential of Ukraine today for energy production is about 30 million tons of conventional fuel per year (Fig. 2).

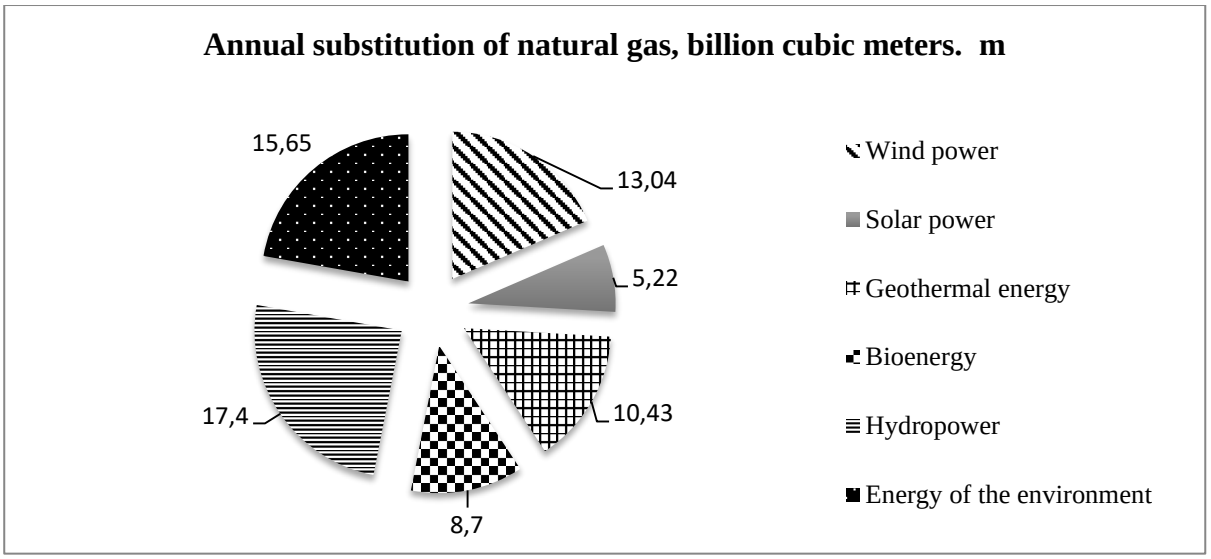

Fig. 2. Potential of renewable (environmentally friendly) energy sources in Ukraine

Source: Formed by the author on the basis of [1]

The use of this potential will enable Ukraine to replace 6 billion cubic meters of natural gas per year by 2020 and reduce its emissions of greenhouse gases by 11 million tons of CO^2 equivalent per year. The share of biomass and waste in total consumption of primary energy in 2030 may amount to 10%, and today it is only 0.7%. For comparison, this indicator in the EU is an average of 6.2%, and in some countries: Latvia - 24.4%, Sweden - 21%, Finland - 20.7%, Austria - 15.5%, Denmark - 14.5 % [3].

Ukraine has significant potential for the development of renewable energy in the agro-industrial complex, while it is necessary to accelerate the pace of the introduction of non-traditional types of energy sources by approving at the state level the relevant programs and development strategies.

However, the effectiveness of the state regulation policy in the field of alternative energy depends precisely on the effectiveness of the regulatory and legislative framework. In addition to the government's policy to support this sector, the alternative energy sector of the agro-industrial complex in Ukraine also attracts investors through another effective tool for supporting emerging projects. This is the "green tariff" set by the National Electricity Regulatory Commission. Today, the "green tariff" in Ukraine is among the highest and most attractive in Europe, and is part of a favorable investment climate in this area [5]. "Green Tariff" is a special high price for the purchase of electricity generated by alternative sources of energy: the sun, wind, water, heat of the

earth, biogas, and others.

The energy potential of biomass in the agro-industrial complex of Ukraine is represented by the energy potential of livestock and vegetable agricultural biomass and the energy potential of forest waste. The main biomass processing technologies that can be recommended for widespread introduction at present are: direct combustion, pyrolysis, gasification, anaerobic fermentation with the formation of biogas, production of alcohols and oils for the production of motor fuels [4]. The economic efficiency of bioenergy equipment is, in most cases, ensured by the right choice of biomass processing technology and location of equipment in areas where it is constantly being accumulated.

National systems of agriculture in most countries of the world are in a state of transformation from a consumer approach to the direction of optimal combination of bioenergy and food production and environmental preservation. The introduction of global information systems for monitoring the state of natural and food resources in the agrarian sector is necessary [2]. Criteria for competitiveness are changing priorities of sustainable development of the agrarian sector, which requires the introduction of the most advanced technologies. In this context, a system of material incentives for efficient use and saving of fuel and energy resources should be developed. The sun's energy in the agro-industrial complex of Ukraine should be used in technological processes. It is economically feasible to use sun-dryers at small enterprises in the agro-processing sector. Modern approaches to agriculture and energy are two of the most important components of the successful development of Ukraine.

Consequently, bioenergy is an option that has a global perspective for the further successful development of the agro-industrial complex. In addition, the introduction and use of alternative energy sources will reduce the impact on the environment, even distribution of energy resources, decentralization of energy production, increase of economic freedom of the state, which are one of the main conditions of sustainable development, will also significantly reduce the process of agro-industrial production.

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