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## **SITUATION AND DEVELOPMENT IN THE BIOENERGY APPLICABLE LAW BIOENERGY DEVELOPMENT UNDER EFFECTUAL LEGISLATION**

*There are carried out analysis of the existing legal instruments designed to promote bioenergy development in Ukraine. These defects of current legislation and ways to overcome them in order to adapt to EU requirements. It is noted that the methods of the EU to overcome the difficulties in implementation of biofuel production and circulation should be implemented in Ukraine.*

**Keywords:** *bioenergy, biofuels, biomass, Energy Strategy, Energy Community, the Directive*

**Introduction.** Economic and energy instability in most countries stipulates to review energy strategies and develop new legislative and financial mechanisms for the development of alternative renewable energy sources ( RES). Trends in recent years have a positive effect on the development of alternative energy sources, including bioenergy. Among these trends there are gradual shift away from nuclear energy and rapid growth in prices for fossil hydrocarbon processing.

Ukraine has some potential in energy production from renewable energy sources, particularly biofuels from organic raw materials and possibilities for its implementation. However, there are a number of regulatory issues and legal nature of the internal market of biofuels, matching and adaptation to international standards that hinder the use of this potential to the fullest. In this regard, particular relevance becomes amendments and alterations to existing legislation and developing new

legislation in line with European standards and requirements of sustainability [1]. To do this, the scientific community and the expert community should develop and offer suggestions for legislators bioenergy development in Ukraine.

**Statement of the problem.** In the legal field of Ukraine there are about thirty legislative acts adopted since independence, which regulate relations in the production and consumption of biofuels. But first laws are mostly declarative which provided financial mechanisms to support the development of renewables. The key legislation relating to issues of bioenergy include:

- Law of Ukraine «On Alternative Energy Sources » (№ 555-IV of 20.02.2003);

- Law of Ukraine«On Amending Certain Laws of Ukraine to establish a «green» tariff» (№ 601-VI of 25.09.2008 );

- Amendments to the «green»tariff – the Law of Ukraine «On Amending the Law of Ukraine «On Electric»(№ 1220-VI of 01.04.2009 );

- Law of Ukraine «On Amendments to Certain Legislative Acts of Ukraine to promote the production and use of biofuels» (№ 1391-VI of 21.05.2009 );

- Energy Strategy till 2030, approved by the Cabinet of Ministers of Ukraine of 15.03.2006 № 145-r ( updated 07.24.2013 town) ;

- Conception of the scientific and technological development program you use production of biofuels, approved by the Cabinet of Ministers of Ukraine of 12.02.2009 , № 276-r.

Through analysis of the existing legal and regulatory framework, it is possible to note that the development of bioenergy significantly slows inadequate policies and effective mechanisms for the implementation of clear tasks. The result is a low investment and competitiveness of private enterprises for the production and supply of alternative energy. Also, the factors that inhibit the growth of the industry can be attributed the discrepancy of standards and certification system according to sustainability criteria of biomass.

According to experts, the most effective that provides real support to producers of electricity from renewable energy sources, there is a law on «green» tariff, which provides a number of benefits for producers and consumers of biofuels. But he also fully covers the issue of the application of «green» tariff , including the use of biofuels and biomass of small volumes in the private sector. The law does not regulate the issue of «green» tariff for energy generated from biogas and municipal solid waste [3, 4, 5 , 6].

**The purpose of research.** The aim is to analyze the existing legal instruments designed to promote bioenergy development in Ukraine and the development of proposals for adapting the basic laws of Ukraine with the requirements and similar laws of the European Union.

**Results and discussion.** Ukraine has a wide range of raw materials, as well as technological and industrial base for the development of bioenergy. Support the development of a new branch should be based primarily on the harmonization of legislation of Ukraine with the EU legislation and the introduction of financial incentives and mechanisms to support investment and innovation in the production of biofuels.

Formation and development of new bioenergy industry in Ukraine is faced with a number of economic hardship. In the European Union settle these issues are realizing through directives on public support biofuels market, including:

- Concessional lending to purchase equipment for the construction of biofuel plants and boilers and equipment for burning biofuels;
- Public funding of research and technology and investigation on cultivation and processing biomass and biofuels.

On February 1, 2011 Ukraine became a full member of the Energy Community. The country has committed to implement a number of European directives and regulations that would harmonize its legislation in the energy sector with the European legal framework. Ukraine signed the Protocol of Accession to the Energy Community has a clear list of regulations that have to be taken into account

Ukrainian legislation, and precise timing of its implementation. The changes were to be implemented in the areas of renewable energy and conservation.

In general, the issues of renewable energy is several directives, including Directive 2001/77/EC . However, a number of provisions of Ukrainian legislation contrary to the provisions of the Directive. According to the Directive, the term «biomass» does not differ from the definitions laid down in national legislation. However , the Law of Ukraine «On Alternative Fuel» contains no complete definition of this term, there is no keyword – «products». With this definition of the term there are unused most common types of organic based materials.

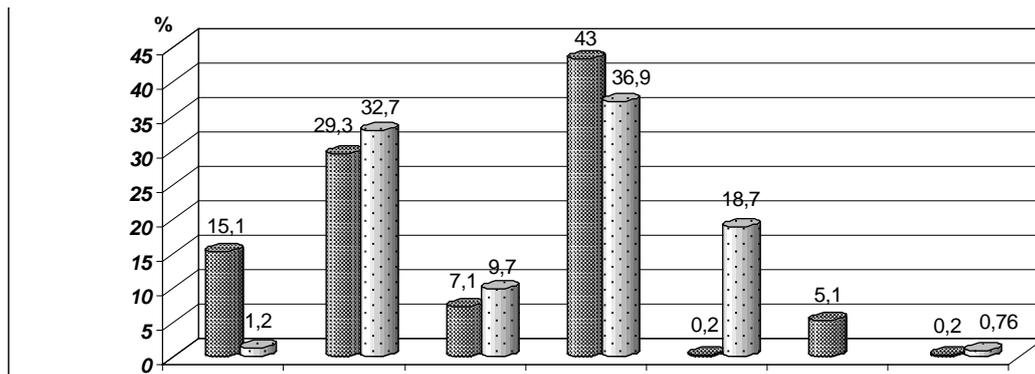
By definition, experts in the law of Ukraine should submit the following interpretation: «Biomass is a renewable biological material of organic origin, undergoing biological decomposition (products , waste and residues of forestry and agriculture, fisheries and related sectors), as well as part of industrial or waste capable of biological decomposition».

According to the Decision 2012/03/MC-EnC 10th Ministerial Council of the Energy Community, Ukraine has as soon as possible to implement 2009/28/YEC Directive on the promotion of energy from renewable sources and amending and subsequently repealing Directives 2001/ 77 / EC and Directive 2003/30/EC. However, the implementation period is set to January1 , 2014 , which will need to inform the Secretariat of the Energy Community and to provide texts of the main provisions of the legislation adopted in these areas under Directive [8].

Cabinet of Ministers of Ukraine 15.03.2006, approved the Energy Strategy of Ukraine till 2030. Whereas, during the development strategy in 2006 were not taken into account global trends in energy and for the past seven years there have been significant changes in the economy and energy industry of Ukraine, the document was revised in 2013. Implementation Strategy, which involves reducing energy use by 30% by 2030, will allow the state to get rid of dependence on imported energy. The goal should be achieved both by optimizing the use of traditional energy-saving technologies and through extensive use of alternative energy from renewable energy sources.

According to the Concept of the State scientific and technical program production and use of biofuels, adopted by the Cabinet in 2013, the share of biofuels in overall balance of the country in 2014 should increase fivefold by state and local budgets, which raises doubts about reality of the tasks required.

More efficient use of traditional energy-saving technologies need to be achieved through modernization of thermal power plants and transportation networks, building new generating capacity, and increase in production of fossil fuels in Ukraine. In addition, the Energy Strategy of Ukraine provides for the further development of alternative energy. According to the document, in 2030 will develop all sectors of alternative energy. The most promising is the development of wind and solar energy. In 2012 in terms of the pace of development and growth of new alternative energy facilities occupied a leading position in comparison with the traditional is by solar and wind energy. It should be noted that the balance sheet of the European Union share of renewable energy is 13%, of which 10% – the share of biomass and all other renewables occupy 3%.



**Figure 1. The structure of energy consumption in the EU and Ukraine**

These are shown in Figure 1. Indicate that the share of biomass in the EU in the structure of the total energy is 15.1%.

At present, the proportion of energy derived from alternative sources in the energy balance of Ukraine is 1.2 % or 1.50 million tonnes of oil equivalent. It is expected that by 2030 the total contribution of alternative energy sources should increase by 8 times [2, 10].

The Strategy states that development of energy from renewable energy sources is an important area that enhances energy security and reduce human impact on the environment. Is expected rise in the share of renewable energy sources ( RES) in the overall balance of the installed capacity to 10% by 2030. According to the Strategy for widespread commercial use in the coming years should be used combustion technology of biomass in boilers and technology collection and utilization of biogas at landfills because the technology is still the best developed. The greatest energy potential in Ukraine have such biomass as fast-growing energy crops, waste processing crops, wood waste and wood . Implementation of existing potential is complicated underdeveloped infrastructure and resource base necessary to ensure uninterrupted supply of raw materials, underdeveloped areas , equipment suppliers, as well as a small amount of generation of each object. Due to these reasons, the dynamics of bioenergy production lag behind other generation based on renewable energy, but can be an important element in the balance of heat energy.

The Energy Strategy stipulates the scheme of «green tariff» for producers of electricity from renewable energy sources and noted the need to consider it and spread on bioenergy. Unfortunately, the share of attention paid to bioenergy in the Energy Strategy of Ukraine is low and there is no clear prescription of effective incentive mechanisms for its implementation. [2]

Another document that examines existing problems and options for solving them is «Biomass Action Plan for Ukraine»( 2009). The aim of this document is to define a strategy for bioenergy development in Ukraine, to define existing mistakes and suggest ways to address them. The project was developed with the experience of the Netherlands – a country which has successfully implemented a program of transition to energy based biofuels from biomass and organic waste.

Action Plan for the effective development of bioenergy sector in Ukraine prevents some problems. To determine possible solutions identified «bottlenecks» were ungrouped in five areas: political, legal aspects, financial and economic issues, technological barriers, the availability of biomass supply and issues of

communication and information sharing. For each problem were proposed appropriate action [7].

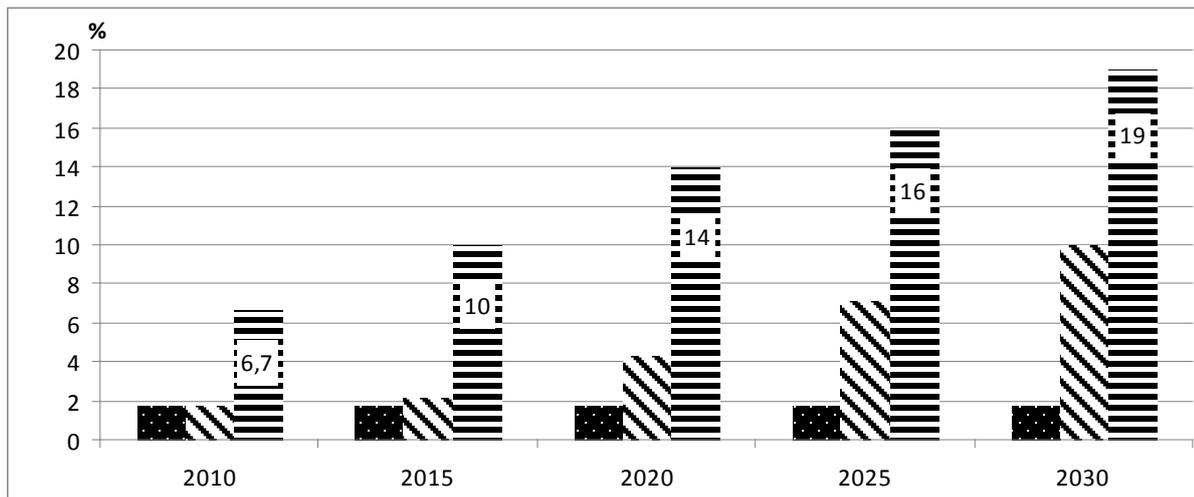
In Ukraine, a member of the WTO and intends to sign an agreement to join the European Union, has become a common basic model development, adopted by the EU, is an innovative model of development in which energy and environmental security of the country combined with the intensification of work on improving legal security, introduction of innovative technologies, such as biofuels, the local and state level.

Due to favorable soil and climatic conditions of Ukraine for growing high energy crops, biomass is a promising direction of fitoenergy, based on biomass plant origin. The result is the production of biomass feedstock for bioethanol, biogas and solid biofuels in the form of wood pellets and briquettes. According to the Association of the market of alternative fuels and energy, in 2012, Ukraine has produced about 800 tons of solid biofuels. Much of up (to 90%) is exported.

Along with those in recent years, the proportion of solid biofuels remaining in Ukraine is gradually increasing, but in the absence of the mechanism of logistics, storage and delivery of this amount is too small for the needs of municipal energy and population.

Analyzing the data it's possible to be noted that the share of biomass in gross energy consumption in the EU by 2030 will reach 19%, which is not substantially the same as the Energy Strategy of Ukraine.

The structure of the distribution of bulk raw biomass accounts for solid biomass. The countries where biomass leaders successfully developed include the Scandinavian countries: Sweden, Austria, Denmark, Finland. In which heat energy from biomass is about 40% through the use of effective financial instruments to stimulate the industry. These include legislative support subsidies, tax incentives, investment financing through grants and special programs and funds.



**Figure 2. The share of biomass in the Energy Strategy of Ukraine, offering expert in bioenergy and the EU (According to Bioenergy Association of Ukraine)**

### **Conclusions.**

- Energy sector in Ukraine in this period of time is in transition reforms. In most cases it is operated manually, late responds to the current challenges and potential threats.
- The main factors that hinder the development of bioenergy are:
  - lack of favorable financing mechanisms in the form of subsidies and incentives for producers and consumers of bioenergy equipment;
  - absence of a functioning state and regional programs and local bioenergy biofuels;
  - not taken into account possibility of bioenergy in drafting the revised Energy Strategy of Ukraine till 2030;
  - underdeveloped market for biomass, biofuels and infrastructure for storage and sales;
  - unfavorable conditions for investment, including foreign (political instability, corruption, etc.).
  - mechanisms to use tariffs do not encourage producers to use local heat for alternative biofuels .

In the legislative field, there are a number of regulations that slow down the use of biomass and organic waste that experts believe could replace fossil fuels by 10–15%.

➤ Obligatory condition of bioenergy development in Ukraine is the state support of research and innovation in the field of improvement of technology growing processing biomaterials and development of evidence-based bioenergy development strategy which takes into account all factors of energy security.

➤ Requires settlement system of market-based instruments to ensure effective economic activities in the production, sale and consumption of biofuels.

➤ Special attention needs to subsidize domestic gas prices for households and housing, which puts energy and heat from biomass and electric energy uncompetitive in these sectors.

Formation and development of bioenergy contribute to the implementation by Ukraine of requirements to reduce emissions under the Kyoto Protocol to the UN Framework Convention on Climate Change, create a guaranteed market for agricultural commodities and biofuels. Therefore, the adaptation of Ukrainian legislation to EU requirements and operation regulations at the appropriate level may be the next step for Ukraine to strengthen the energy security of the country.

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### ***Анотація***

***Сінченко В.М., Гументик М.Я., Баликіна В.В.***

***Стан та розвиток біоенергетики в умовах чинного законодавства України та ЄС***

*Проведено аналіз чинних нормативно-правових документів, покликаних сприяти розвитку біоенергетики в Україні. Досліджено етапи формування діючого законодавства, вказано переваги, недоліки та шляхи їх усунення задля адаптації до вимог ЄС.*

***Ключові слова:*** біоенергетика, біопаливо, біомаса, Енергетична стратегія, Енергетичне Співтовариство, директива.

### ***Аннотация***

***Синченко В.Н., Гументик М.Я., Балыкина В.В.***

***Состояние и развитие биоэнергетики в условиях действующего законодательства в Украине и ЕС.***

*Проведен анализ действующих нормативно-правовых документов, призванных способствовать развитию биоэнергетики в Украине. Указаны недостатки действующего законодательства и пути их устранения для адаптации к требованиям ЕС.*

***Ключевые слова:*** биоэнергетика, биотопливо, биомасса, Энергетическая стратегия, Энергетическое Сообщество, директива