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Principles of legal regulation of bioenergy use in the European Union

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The relevance of the study is determined by raising and solving the issue of regulation of such a field of energy as bioenergy in the legal field of the European Union. The main purpose of this paper was to investigate the specific features of legal norms for the use of bioenergy in the European Union, to identify the available problems and prospects, possible ways to improve EU legal norms in this area, which are also subject to application in the Ukrainian legal system. The author paid attention to the new provisions that were implemented in connection with the adoption of Directive 2018/2001. The leading methods for studying this problem were the following: functional approach, logical analysis method, synthesis method, deduction method, etc. The impact of these provisions on the energy sector of the European Union and on the environment of its member states in general has also been investigated in sufficient detail. Special attention is paid to the positions of scientists and the recent lawsuit regarding the adoption of Directive

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2018/2001. The paper examines the specific features of the legal regulation of bioenergy in the European Union, analyses the concept of bioenergy and biofuels in Ukrainian and European legislation, and highlights the main provisions of the European Union directives concerning the promotion of the use of energy produced from renewable sources, including biomass. It was found that in the EU, bioenergy is the leading source of renewable energy for heating and cooling (88% of all renewable energy sources), which is 16% of the total European final energy consumption in this sector. Therefore, considering the demand and need for the use of such a resource, the EU legislative framework contains a number of principles and visions for regulating relations in the field of production, circulation, and disposal of waste from biofuels as the main raw material for bioenergy. The fundamental principles in the EU legislation on the use of bioenergy include, firstly, the principle of sustainable production and consumption of biomass, secondly, prevention regarding the reduction of adverse consequences when using this resource, and thirdly, increasing the share of use of alternative energy sources to 75% of final energy consumption by 2050. The materials of this paper are of practical value for scientists and researchers who could conduct their research solving the problem of using bioenergy and give preference to other energy sources

Keywords: bioenergy, sustainability, alternative energy sources, biofuels

Introduction

Today, the issue of reducing the use of conventional energy sources, which include minerals – oil, gas, coal, etc., occupies a major place on the agenda of leading countries around the world. The results of human activity over millennia of thoughtless use of natural resources have led to catastrophic problems and caused extreme damage to the planet, from global warming to damage to the health and lives of people themselves. Consequently, over the past decade, the vector of changing priorities, namely, increasing the share of using alternative energy sources, has been actively discussed. Given that Ukraine is an agrarian state, it is truly relevant to investigate the practices of the European Union regarding the legal regulation of the production and circulation of biofuels as an alternative energy source.

The problems of legal regulation of the use of alternative energy sources and, specifically, bioenergy in the European Union

and in Ukraine were dealt with by such scientists as Ye.V. Shulha, Yu.M. Rud, S.A. Obolenska, T.S. Novak, T.F. Plakhtii, H.F. Koshlak, M.M. Kuzmina, and others.

The purpose of this paper was to investigate the principles of legal regulation of bioenergy in the European Union.

Results and Discussion

The authors of this paper believe that human is the most dangerous creature on the planet. The results of a person's actions leave their mark on everything, and often quite negatively. The famous American neuroendocrinologist, professor of biology, neurology, and neurosurgery at Stanford University, Robert Sapolsky, in his book "Behave: The Biology of Humans at Our Best and Worst", wrote "we act according to a certain strategy. Human behaviour can be different: reprehensible or, on the contrary, amazing, or ambiguous – somewhere in between these two poles. What

happened in the second leading up to this, and what triggered this behaviour? This is the parish of the nervous system" [1]. The scientist once even proposed to abolish the criminal justice system altogether, based on his research and the development of neuroscience in general, or to a lesser extent to reduce the weight of "pseudoscience" in the courtroom and increase that of the real one (this refers to neurobiology).

On the one hand, one can agree with the scientist. However, even neuroscientists are not immune from mistakes. Therewith, it will be quite appropriate to use the results obtained more often in research on the biology of human behaviour in legal science.

Thus, human is still the bearer of both destruction and prosperity, or the balance between these two processes. This is clearly expressed in relation to the use of natural resources, primarily energy. After all, this is almost the only resource on which the further comfortable life of each of us depends. This subject is currently the top one both in Ukraine and in the European Union. Alternative energy sources, renewable energy, green energy, or bioenergy are increasingly being heard in the media. This paper will dwell on the characteristics of the legal basis for the use of the latter in more detail. What is bioenergy? There is no concept of "bioenergy"

in Ukrainian legislation. In the scientific doctrine, this concept is interpreted as the use of biomass energy (organic matter that is formed due to photosynthesis) [2]. Notably, only the concept of biomass is consolidated in the legislation of Ukraine – it is a non-fossil biologically renewable substance of organic origin, capable of biodegradation, in the form of products, waste, and residues of forestry and agriculture (crop and animal husbandry), fisheries and technologically

related industries, as well as a component of industrial or household waste, capable of biodegradation (Article 1 of the law of Ukraine of 14.01.2000 "On Alternative Fuels").

It would seem that the use of biomass energy is a suitable alternative for many agricultural enterprises. However, as of 2021, this practice is not common in Ukraine. Perhaps the secret lies in the state's own interest in supporting such an alternative energy source.

As for the EU, according to statistics, bioenergy is the leading source of renewable energy for heating and cooling (88% of all RES), accounting for 16% of the total European final energy consumption in this sector. For instance, the leaders in the energy use of biomass in Europe are Lithuania (33.6%), Finland (33.5%), Sweden (31.9%), Estonia (26%), Latvia (22.9 %). The largest share of biomass in the total contribution of all renewable energy sources occurs in Estonia (93.1 %), Latvia (87.6 %), Poland (87.3 %), Finland (86.3 %), Hungary (85.7 %) [3].

Today, legal regulation in the specified area is carried out based on Directive (EU) 2018/2001 of the European Parliament and the Council of December 11, 2018 on the promotion of the use of energy produced from renewable sources (EU Directive 2018/2001) and Directive 2009/30/EC of the European Parliament and the Council of April 23, 2009 [4, 5].

Attention should be paid to the fundamental principles of the use of bioenergy, which are prescribed in EU legislation. Firstly, it is the principle of sustainable production and consumption of biomass, secondly, safeguards to reduce adverse consequences when using this resource, thirdly, the goal of increasing the share of use of alternative energy sources to 75% of final energy consumption by 2050 [4]. Therewith, it should

be recalled that biomass is an added alternative source for energy, which on the one hand has its benefits, and on the other it can have adverse consequences if used thoughtlessly.

The authors of this paper would like to pay special attention to the provisions contained in Directive (EU) 2018/2001, according to which biofuel production must be sustainable. First of all, the sustainability criteria do not apply to all types of biofuels, but only to transport biofuels and “bioliquids” that have non-transport energy uses. This principle applies regardless of where the raw materials were grown – inside or outside the EU. This policy aims to create a long-term perspective for investment in sustainable biofuels with a low risk of indirect land-use changes, with the principal purpose of decarbonizing the transport industry. Adherence to the general principle of the share of renewable fuels can provide confidence for investors and contribute to the sustainable development of alternative renewable transport fuels, including advanced ones. Since alternatives from renewable sources may be lacking or economically inefficient for all fuel suppliers, member states should be able to distinguish between fuel suppliers and, if necessary, exempt particular types of suppliers from this obligation. Since trading in transport fuels is not encumbered, fuel suppliers in member states with small amounts of corresponding resources can easily obtain renewable fuels from other sources [4].

In addition, the above-mentioned document sets requirements for reducing greenhouse gas emissions associated with the use of biofuels, restrictions on the cultivation of biomass on certain land categories [4]. For instance, indirect land-use changes occur when the cultivation of crops to produce biofuels, bioliquids, and biomass fuels displaces

conventional crop production for food and feed purposes. The added demand to produce the former increases the pressure on land and can lead to the conversion of agricultural land in areas with high carbon levels, such as forests, wetlands, and peatlands, which will contribute to increased greenhouse gas emissions [4].

The preamble of Directive 2015/1513/EC (no longer valid based on EU Directive 2018/2001) declared that the amount of greenhouse gas emissions associated with indirect land use and the change in land use itself can negate some or all of the savings in greenhouse gas emissions of individual biofuels, bioliquids, or biomass fuels [6]. Although there are risks associated with indirect land-use changes, studies have shown that their scale depends on numerous factors, namely on the types of raw materials used for fuel production, the level and added demand for raw materials caused by the usage of biofuels, bioliquids, and biomass fuels (item 5).

Ukrainian scientists also express their concerns about the volume of biomass use. Among the disadvantages of biomass, H.V. Koshlak and A.M. Pavlenko name large fluctuations in the chemical composition (nitrogen, chlorine, alkalis) and water content, the tendency to form resins and the low melting point of ash [7], which can adversely affect the environment and the quality of human life.

Returning to the provisions of the EU Directive 2018/2001, one should also mention the environmental requirements established for the cultivation of agricultural raw materials processed into biofuels, social obligations (ensuring food security during the production of biofuels, etc.) [4]. Furthermore, the EU Directive 2018/2001 obliges to implement measures aimed at ensuring the provision of reliable information on compliance with

sustainability requirements for biofuels. According to S. Kandula, there are three ways to demonstrate compliance with the criteria: a) recognition of national voluntary schemes that cover one or more sustainability requirements at the EU level; b) bilateral and multilateral agreements with third countries, and c) national confirmation schemes [8].

Conclusions

Thus, based on the conducted study, the following conclusions can be drawn. A clear definition and legislative consolidation of legal forms of agricultural production is of great practical importance, since it will contribute to the free choice of the form of implementation of entrepreneurial activity in

the agricultural sector. The development of agricultural legal relations in the sphere of legal forms indicates the multitude of business entities in the agricultural sector and the discrepancy between the legislation on legal forms of agricultural production and modern realities. The legal literature and legislation do not have a unified approach to the concept of the legal form of management. Types of legal forms are consolidated in the sub-legislative act of the regulation, which contradicts the norms of agricultural legislation. The imperfection of agricultural legislation on legal forms leads to an increase in the role of acts of judicial authorities in regulating agricultural legal relations concerning legal forms of agricultural production.

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Принципи правового регулювання використання біоенергетики в Європейському Союзі

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Анотація

Актуальність дослідження зумовлена підняттям та вирішенням питання регулювання такої галузі енергетики, як біоенергетика, у правовому полі Європейського Союзу. Головною метою даної статті є дослідження особливостей правових норм використання біоенергетики у Європейському Союзі, визначити існуючі проблеми та перспективи, можливі шляхи вдосконалення юридичних норм ЄС у цій галузі, які також підлягатимуть застосуванню і в українській правовій системі. Зокрема, автор приділив увагу новим положенням, які були впроваджені у зв'язку із прийняттям Директиви 2018/2001. Провідними способами для дослідження цієї проблеми є наступні методи: функціональний підхід, метод логічного аналізу, метод синтезу, метод дедукції та ін. Також досить детально було досліджено вплив цих положень на енергетичну галузь Європейського Союзу та в цілому на навколишнє середовище його держав-членів. Особливу увагу приділено позиціям науковців та нещодавньому судовому позову щодо прийняття Директиви 2018/2001. У статті досліджено особливості правового регулювання біоенергетики в Європейському Союзі, проаналізовано поняття біоенергетики та біопалива в українському та європейському законодавстві та виокремлені основні положення Директив Європейського Союзу, що стосуються заохочення до використання енергії, виробленої з відновлюваних джерел, в тому числі, з біомаси. Зокрема, встановлено, що у ЄС біоенергетика виступає провідним джерелом відновлюваної енергії для опалення та охолодження (88 % всіх ВДЕ), що становить 16 % загального європейського кінцевого споживання енергії в цьому секторі. Відтак, враховуючи попит та необхідність у використанні такого ресурсу, законодавче підґрунтя ЄС містить ряд принципів та візії, щодо врегулювання відносин у сфері виготовлення, обігу та знешкодження відходів від біопалива, як основної сировини для біоенергетики. Зокрема, до основоположних засад в законодавстві ЄС щодо використання біоенергетики відносяться по-перше, принцип сталого виробництва та споживання біомаси, по-друге, запобігання щодо скорочення негативних наслідків при використанні цього ресурсу, по-третє, збільшення частки використання альтернативних джерел енергії до 75 % кінцевого споживання енергії до 2050 року. Матеріали статті становлять практичну цінність для вчених та дослідників, які могли б провести власне дослідження вирішуючи проблему використання біоенергії та надати перевагу іншим джерелам енергії

Ключові слова: природоресурсне право, природоресурсні правовідносини, природні ресурси, кліматичні ресурси, клімат