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Legal Problems of Using Alternative Energy Sources in Russia and Abroad

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Abstract--The paper is devoted to topical problems of legal regulation of public relations in the field of alternative (renewable) energy sources in Russia and abroad. The paper shows the formation and development of the legal framework governing the investigated area of public relations in Russian and foreign law. The necessity of adopting a special legislative act in the Russian Federation dedicated to the civil regulation of public relations arising from the use of alternative (renewable) energy sources is substantiated.

Keywords---alternative energy, energy sources, energy law, energy supply, energy, green energy industry, non-traditional energy, renewable energy, secondary energy, wind energy, wind power.

Introduction

The environmental deterioration and the depletion of organic fuel reserves makes humanity think about how to get heat and electricity not from hydrocarbons, but from alternative (renewable) energy sources. As a rule, such sources are based on the use of certain natural phenomena, such as: wind, waves, tides, sunlight. The use of these natural phenomena for the generation of thermal and electric energy

has become widespread in Australia, Germany, Denmark, Spain, Iceland, Canada, Portugal, USA, and France. Non-traditional energy sources are also used in the post-Soviet space. For example, according to some researchers, the potential annual reserves of non-traditional renewable energy sources in the CIS countries are many times higher than the reserves of fossil fuels (Tleuov, 2009).

The ubiquity of renewable energy sources requires a proper regulatory framework governing their use. The problem of legal regulation concerning the use of alternative energy is naturally of interest to Russian (Zakrevsky, 2017; Ksiropoulos, 2013) and foreign legal scholars (Archer & Jacobson, 2005; Fisher, 1974; Goldemberg et al., 1988; Hafele, 1981; Schiel & Schlaich, 1988), serving as a subject for scientific discussions among them. All this indicates the need for further theoretical research on this range of problems.

Methodology

The methodological basis for the research was formed by general scientific, special scientific and special research methods in their organic combination. Dialectical and systemic methods, the method of analysis and synthesis made it possible to reveal the diversity in the approaches of domestic and foreign legislators to the legal regulation of public relations arising from the operation of alternative (renewable) energy sources (De Vries et al., 2007; Koroneos et al., 2003).

The cross-sectoral method and the law interpretation method made it possible to determine the content of the rules governing the use of alternative energy sources from the standpoint of civil law science (Goumas & Lygerou, 2000; Henriques & Sadorsky, 2008). The comparative legal method made it possible to conduct a comparative legal analysis of Russian and foreign legislation regulating the use of non-traditional (renewable) energy sources.

Discussion and Results

One of the key factors in the sustainable development of the economies in countries exporting high technologies is their use of new, innovative sources for renewable energy (El-Ghonemy, 2012; Dincer, 2000). Encouraging the development of the renewable energy market at the European legislative level has led to a positive impact on export prospects, increased employment, the development of small and medium-sized enterprises and independent energy producers (Goldthau, 2008; Schäfer et al., 2011). In this regard, within the framework of the new energy policy formation in the European Union, the Green Paper "European Strategy for the Security of Energy Supply" (The Green Paper, 2000) was adopted, designed to ensure a balance between maintaining the competitiveness between various types of energy supplies and protecting the natural environment.

Germany is the leader in the use of alternative (renewable) energy sources in the European Union. As a result of the alternative using wind turbines and solar panels, depending on the time of the year and weather conditions, this country has achieved high stability in the generation of electrical energy (Verrastro et al.,

2010). In the spring and summer months, most of the energy in Germany is generated by using solar panels. In the autumn and winter months of the cold period, the main load falls on the wind farms. Not possessing a sufficient amount of its own energy resources, Germany has chosen its own path aimed at the development of innovative technologies in the field of alternative energy. During 2019-2020, the share of energy generation from renewable sources in this country reached 85% due to the constant increase in the number of "alternative" power plants and due to favourable weather conditions (Udaeta et al., 2007; Chen et al., 2012). This situation led to the adoption by the German leadership of decisions to reduce the number of traditional power plants operating on hydrocarbons and the closure of nuclear power plants by the end of 2022. However, the abnormal winter of 2021 forced the German leadership to reconsider such a hasty decision. On this occasion, the portal "21st century WIRE" wrote the following: "Despite the fact that over the past twenty years, coal-fired power plants in Germany have been the object of horror and vilification, they are now valued for what they are: truly available sources of power generation, available on request in any weather (Alava et al., 2017). At present, heavy snowfalls have passed on the territory of the EU countries, which means that solar panels covered with snow do not generate electricity and become completely useless" (Llewellyn & Rockwell, 2021). It should be noted that even a cloudy sky that lasts for several weeks does not allow obtaining nominal electric energy with the help of solar panels. In addition, the long calm weather that set in this winter has stopped the work of about 30 thousand wind turbines in Germany. All this made the European legislator doubt the impeccability of the use of alternative (renewable) energy sources (Pérez et al., 2021). It is noteworthy that almost all EU countries and individual states in the United States faced a similar situation. For example, wind power was the fastest growing source of electricity in the Texas power grid. In 2020, wind turbines supplied more than 35% of electricity to the grid and even overtook coal as the second most important source of energy in the system after natural gas. However, an anomalous unique combination of a number of weather conditions in the winter of 2021 led to an energy disaster in Texas, expressed in icing and a complete stop of the generation of electricity from all wind power plants. As a result, more than 4.5 million households were left without electricity and heat. The authorities were unable to react quickly, as there is an autonomous power supply network in Texas: if this network fails, other traditional energy sources cannot be connected to it (The freeze in Texas exposes America's infrastructural failings, 2021).

As we can see, developed foreign legal orders have a diverse rich experience for effective legal regulation on using alternative (renewable) energy sources, ensuring the balance of interests between energy producers and climate protection. The countries participating in the CIS treaty do not lag behind in this regard (Perez et al., 2017; Gamez et al., 2016). The main emphasis in countries throughout the post-Soviet space is placed on the use of traditional sources of electricity and heat. Therefore, the legislative base mainly regulates the classical methods of energy generation. As for the legal regulation on using renewable energy sources in Russia, according to some researchers, "it should develop through the convergence of the norms of Western European countries with a developed legal order in the United States, taking into account the already accumulated experience of their enforcement (Rinartha et al., 2018). In view of the unprofitable

energy supply using renewable energy sources, its successful development and profitability are inconceivable without state support, which implies the creation of legal and economic prerequisites for ensuring a compensatory function in relation to the rights holders of generating installations based on renewable energy sources” (Lévêque et al., 2010). At present, such regulation is performed based on of the provisions of the Federal Law No. 35-FZ "On the Electric Power Industry" dated March 26, 2003. It should be noted that, despite the widespread distribution of non-traditional energy generators, there is still no special law at the federal level in the Russian Federation dedicated to the regulation of the use of renewable energy sources. However, the absence of such a Law at the federal level could not prevent certain Federal Subjects of the Russian Federation from adopting their own legislative acts in this area. So, for example, the State Assembly (Il Tumen) of the Republic of Sakha (Yakutia) on November 27, 2014 adopted the Law of the Republic of Sakha (Yakutia) 1380-Z №313-V "On renewable energy sources in the Republic of Sakha (Yakutia)". The main goals for the adoption of this Law were: creation of legal, economic and organizational foundations to stimulate energy saving and energy efficiency in the Republic of Sakha (Yakutia) by increasing the share of energy produced using renewable energy sources or peat in the energy balance of the Republic of Sakha (Yakutia); increasing the reliability of power supply through the use of renewable energy sources or peat; reducing the level of negative impact on the environment through the use of technologies for the use of renewable energy sources or peat; reducing the use of non-renewable energy sources on the territory of the Republic of Sakha (Yakutia) (The Russian energy policy, 2013).

The analysis of these bylaws allowed us to conclude that all of them, with the exception of the last, are intended to regulate the procedure for promoting the use of renewable energy sources, but do not even contain elementary basic concepts used in this industry. Thus, we can state that the current Russian legislation regulating applying the renewable energy sources is still at the initial stage of its development.

Various approaches to the legal regulation of public relations arising from the use of renewable energy sources can be traced in the legislation of other CIS member states. Thus, in the post-Soviet space, in addition to Russia, the use of alternative energy sources has become widespread in the Republics of Belarus, Kazakhstan, Uzbekistan, and Ukraine (Xiaoqin, 2010).

As it was rightly noted in the legal literature, “the Republic of Belarus does not have its own fuel and energy resources sufficient to fully provide the economy and social sphere; the country has to import a significant part of them. In these conditions, the use of renewable energy sources is one of the topical directions intended for the development of the energy sector of the republic and an important aspect of diversification of fuel and energy resources” (Tsalko, 2011). The use of unconventional energy sources is regulated by the Law of the Republic of Belarus dated December 27, 2010 No. 204-Z "On renewable energy sources" and by the Decree of the President of the Republic of Belarus dated May 18, 2015 No. 209 "On the use of renewable energy sources". A distinctive feature of the Belarusian legislation in the field of alternative energy is the establishment of quotas for the use of renewable energy sources. It should be noted that quotas are

set only for those power plants, during the operation of which it is planned to sell the electricity of SPA "Belenergo" with a total electric capacity of 117.42 MW, including using biogas energy - 20 MW, wind energy - 11 MW, solar energy - 1.55 MW, water flows energy - 73.59 MW, biomass (firewood, wood chips) burning energy - 11.28 MW. Quotas do not apply to the use of renewable energy sources for personal purposes.

At present, the system of alternative energy sources in the Republic of Kazakhstan includes 18 stations with a total capacity of 285 MW. The use of non-traditional power plants is regulated by the Law of the Republic of Kazakhstan dated July 4, 2009 No. 165-IV "On support for the use of renewable energy sources." The share of renewable energy sources in the Republic of Kazakhstan today does not exceed 1%. The most widespread are: wind energy; small hydroelectric power plants; solar installations for the production of heat and electricity (Akhmetova, 2017). From a meteorological point of view, Kazakhstan is a favourable country for the large-scale use of wind energy. In terms of wind resources, the Republic is in third place in the CIS, second only to Russia and Tajikistan in this parameter. The total wind energy potential is estimated at about 920 billion kWh, and the entire potential of alternative energy sources of this Republic is approaching 1 trillion kWh.

In 2019, special legislation regulating the use of renewable energy sources appeared in the Republic of Uzbekistan. This is the Law dated on May 21, 2019 No. ZRU-539 "On the Use of Renewable Energy Sources". The climatic and geographic conditions of Uzbekistan make it possible to actively use the sun energy to obtain electric and thermal energy on an industrial scale (Matchanov, 2019). The sunshine period duration for different regions of the Republic of Uzbekistan varies from 2650 to 3050 hours a year, on average, the sunshine period duration per day ranges from 11-13 hours in summer months and 3-5 hours in winter. The total capacity of solar power in Uzbekistan is rated at around 50.973 million tons equivalent of oil, which is 99.7% of the full total capacity of all of the sources of renewable energy examined thus far in the area of the republic; its industrial capacity is 176.8 million tons (98.6% of the entire technical potential of renewable energy sources). The wind energy use in the Republic of Uzbekistan is practically reduced to zero, due to its weak wind energy potential. Such power plants are used only for the needs of agriculture in remote areas. It should be noted that agricultural waste in the form of cotton stalks is a source of biogas, which is used in Uzbekistan not only for domestic purposes, but also for generating electricity.

We see the legislation of Ukraine as quite progressive in the field of legal regulating the use of alternative (renewable) energy sources. This sphere of public relations in this country is regulated by the Law dated February 22, 2003 No. 555-IV "On Alternative Energy Sources". It should be noted that in this legislative act it was for the first time in the entire post-Soviet space along with the term "renewable energy sources", that they received their legislative consolidation and defined such basic concepts in the field of wind energy as: "wind power plant" under which it is proposed to understand an electrical installation for converting the kinetic wind energy into electrical energy; a "wind power station" is a group of wind power plants or a separate wind power plant, equipment and structures

located in a certain area, which are functionally interconnected and constitute a single complex intended for the production of electrical energy by converting kinetic wind energy into electrical energy. It is also noteworthy that Law 555-IV, along with the definition of all basic terms inherent in alternative energy, in its Article 11 establishes the procedure for the operation of renewable energy sources, indicating that the operation of such energy sources at alternative energy facilities is carried out in the following conditions: safe work performance, state supervision over energy consumption regimes; energy security, which guarantees technical and economic satisfaction of periodic, current and future needs of energy consumers; fulfilment of technological requirements for the production, storage, transmission, supply and consumption of energy; compliance with uniform state norms, rules and standards by all subjects of relations related to the construction (creation), operation, decommissioning of alternative energy facilities, dispatching (operational and technological) management systems; observance of the rules concerning operation of alternative energy objects regulated by normative legal acts, which are mandatory for all business entities. As a positive feature of the Ukrainian legislation regulating the use of alternative sources, it should be noted that it contains norms on the responsibility of operators of such energy sources. So, according to Article 14 of the Law dated February 22, 2003 No. 555-IV "On alternative energy sources", violation of the legislation on the use of alternative energy sources entails liability in accordance with the laws of Ukraine. It should be noted that the Ukrainian legislator is developing a concept for the complete transition of its energy system to renewable energy sources in the long term, up to 2050 (Diachuk et al., 2018).

As you can see, despite the fact that alternative sources for obtaining electrical and thermal energy have been exploited everywhere and for quite a long time, so far, neither in Russia nor abroad a proper regulatory legal framework has been formed for effective legal regulation of their use.

Conclusions

The problem of effective legal regulation on using renewable energy sources is relevant not only for Russia, but also for most foreign countries. In the Russian Federation, the need for the adoption of a special legislative act dedicated to civil regulating the use of various types of alternative energy sources has long been ripe. We believe that when developing such a Law, all positive foreign experience in the studied area of public relations should be taken into account. The adoption of such a source will allow practicing lawyers in the presence of disputable situations to uniformly interpret the current Russian legislation governing the use of renewable energy sources, and in cases of harm caused by such sources, to effectively protect the rights and legitimate interests of victims.

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