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ENVIRONMENTAL AND LEGAL FRAMEWORK FOR THE REGULATION OF ENERGY RESOURCE UTILIZATION

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Abstract

In this article, opinions were expressed on the improvement of regulatory documents and their analysis regarding the environmental and legal framework and system for regulating the use of energy resources of Energeia. Also, the most important issues related to the theory of Environmental Law, the further development of the system of environmental and legal foundations for the regulation of the use of energy resources were analyzed. It was studied from the point of view of the problems of issues of Environmental Legal Regulation of the use of energy sources, the national and international significance of energy law in the natural resource system, the origin of the right to use it within the framework of scientific research. The environmental and legal basis for regulating the use of energy resources in the energy sector is carried out in certain forms and methods.

Keywords: Energy conservation, development strategy, renewable energy sources, fuel and energy resources, energy security, thermal energy, law, global environmental issues.

Introduction

Today, a number of efforts are being made in the economic and social sectors of our republic to increase energy efficiency and expand the use of renewable energy sources. In particular, the decree of the president of the Republic of Uzbekistan dated March 1, 2013 “on measures for the further development of alternative energy sources”and the decree of the president of the Republic of Uzbekistan dated May 5, 2015 “on the program of measures to reduce the volume of energy consumption in the sectors and social sphere in 2015-2019, the implementation of energy-saving technologies- in the years, the decision”on the program of measures for the further development of renewable energy, increasing energy efficiency in the sectors of the economy and in the social sphere “and the laws of the Republic of Uzbekistan”on the use of renewable energy sources " contribute significantly to the development of the industry. Within the framework of these important documents, large-scale reforms are being carried out in our republic. In particular, the Republican commission on energy efficiency and energy renewable development was established, a “roadmap” for the development of solar energy in Uzbekistan was developed in Tashkent with the support of the Asian Development Bank, and work is underway to build solar photovoltaic plants in a number of regional districts. Today, in the new

Uzbekistan energy system, huge projects are being implemented to ensure the energy security of the country, increase energy efficiency and provide sustainable energy to the sectors of the economy. Special attention is paid by the president to further reduce the energy capacity of the gross domestic product in our country, reduce the cost of products and implement the green energy policy, that is, to expand the use of renewable energy sources, including solar, wind and water energy. It provides for a sustainable supply of energy resources to the economy by solving two tasks. First of all, it was considered to diversify fuel balance through the widespread use of renewable energy resources, that is, to reduce the contribution of natural fuels (natural gas, coal)in the production of electricity and thermal energy due to the replacement of traditional types of fuel for renewable energy. Secondly, the tasks of reducing the energy capacity of production in the sectors of the economy, as well as improving the ecological condition of industrial areas are outlined. The experience of developed foreign countries shows that solar energy, one of the sources of renewable energy, is well mastered in practice. The reason is that solar energy is a biologically and environmentally safe, renewable energy that can be easily converted into heat and electricity based on the methods known in science, as well as efficiently foiled from it for various purposes. Let's dwell on some information about the use of solar energy. It has a very large source of energy, the light of which reaches the surface of the Earth in 8 minutes. The density of solar radiation energy on the Earth's surface is 150 to 250 kilowatts/m2 or 1300-2200 kilowatts/m2 per year. Under the influence of solar energy, a favorable climate is created for mankind, flora and fauna.et's dwell on some information about the use of solar energy. It has a very large source of energy, the light of which reaches the surface of the Earth in 8 minutes. The density of solar radiation energy on the Earth's surface is 150 to 250 kilowatts/m2 or 1300-2200 kilowatts/m2 per year. Under the influence of solar energy, a favorable climate is created for mankind, flora and fauna. In addition, all types of energy resources on our planet are derivatives of solar energy and serve humanity. At the same time, favorable environmental and climatic conditions in the use of renewable energy, solar and wind energy in our country create a wide possibility of developing solar panels. The law “on the use of renewable energy sources”by our state is the legal basis for the rapid development of this sector. In accordance with the law, the main priorities of public policy in the industry were laid out, in which the support of renewable energy sources and the developers of their devices is one of the main directions. Material and methods The article used comparative-legal analysis of scientific research, analysis of international documents, as well as methods of general methods – observation, generalization, induction, deduction and analysis-synthesis. In the course of the study: first, opinions were analyzed on the issues of improving energy efficiency and legal regulation of the use of renewable energy sources and improving regulatory legal documents related to the system and their analysis. Secondly, energy efficiency and regulation of renewable energy sources, the national and international importance of energy law and current legislative acts have been studied. Research results In our republic, the full satisfaction of the population's demand for electricity resources, the transformation of electricity grid enterprises are considered urgent issues.econdly, energy efficiency and regulation of renewable energy sources, the national and international importance of energy law and current legislative acts have been studied. Research results In our republic, the full satisfaction of the population's demand for electricity resources, the

transformation of electricity grid enterprises are considered urgent issues. Therefore, on the issues of radical reform of the energy sector, many laws, decrees and resolutions were adopted under the leadership of our president on the creation of a whole new system. The decision of the head of our state on July 10, 2020 “on additional measures to reduce the dependence of economic sectors on fuel and energy products by increasing the energy efficiency of the economy and attracting available resources”serves to ensure the stable functioning of economic sectors. In order to ensure the implementation of this decision, many activities were carried out. In particular, in 2020-2022, 3.3 billion in 25 large energy-consuming enterprises of the economic sectors. kW. clock electricity, 2.6 billion. Cube. measures were developed in the cross section to save meters of natural gas and 16.5 thousand tons of oil products. Renewable energy producers are exempt from paying property taxes for installing renewable energy devices (with a nominal capacity of 0.1 mW or more) and from paying land taxes on plots occupied by these devices for a period of ten years from the moment they are commissioned. Property owned by persons using renewable energy in residential areas completely disconnected from the current energy resource networks is not subject to property taxes from individuals for a period of three years, from the month of use of renewable energy sources. Persons using renewable energy in residential areas completely disconnected from existing energy resource networks are exempt from land taxes for a period of three years from the month in which renewable energy is used. In the case of electricity generation from renewable energy sources for personal needs, it is not required to obtain authorizing documents. In the development strategy, in 2022-2026, priority areas for the further development of energy efficiency in renewable energy, in the sectors of the economy and in the social sphere were identified, namely: Saving nearly 3 billion cubic meters of natural gas per year in exchange for bringing the share of renewable energy sources to 25% by 2026; widespread introduction of renewable energy sources and increase energy efficiency in housing and communal services, objects of the social sphere and other areas; innovative technologies in the field of development of renewable energy and energy efficiency, the introduction of scientific and technical developments, the expansion and localization of the production of energy-saving equipment and devices, including the creation of engineering centers; diversification of the fuel and energy balance to attract business entities in the creation of production capacities based on proven technologies for the production of electricity using renewable and alternative energy sources, the use of secondary energy resources, the use of solar energy. The president of the Republic of Uzbekistan dated May 26, 2017 “further development of renewable energy in 2017-2021, the domestic demand for energy resources of the economy is determined by the expected dynamics of economic development, changes in the structure of the economy and the level of its specific energy intensity. As of 2030, the consumption of the Republic is 120.8 crore.kW.s is expected to be. At the same time, the population's demand for electricity – 21.9 billion.kW.s, the economic sector's demand for electricity – 85.0 billion.kW.s is expected to be.[1]

Renewable energy is an energy source derived from the environmental energy flow. These include biogas from solar, wind, water resources, geothermal sources, industrial and municipal, agricultural waste. Renewable energy potential one important aspect of reducing parnik gas discharges can be using non-conventional and non-organic fuel renewable energy sources. The introduction of modern technologies in the use of alternative energy sources such as solar,

biogas, wind contributes to the further diversification of the fuel and energy complex of our country. For this reason, it is the same fact that its production is increasing at a rapid pace in order to satisfy energy consumption. In this regard, the introduction of high-tech methods and innovative technologies based on the achievements of advanced science is of particular importance in energy saving. In order to regulate and systematize these relations, the president of the Republic of Uzbekistan No. PQ-3012 “2017-2021- the decision”on the program of measures for the further development of renewable energy in the years, the development of energy efficiency in the sectors of the economy and the social sphere“, the law of the Republic of Uzbekistan”on the use of renewable energy sources“, the decree”on measures for the further development of alternative energy sources " of March 1, 2013 opened new opportunities for Through this, it is envisaged to achieve a balance between man and nature and to save natural resources in achieving sustainable development, use renewable, environmentally pure energy sources and achieve a number of goals. Decree No. 5863 of the president of the Republic of Uzbekistan dated October 30, 2019 “on approval of the concept of Environmental Protection of the Republic of Uzbekistan in the period up to 2030”was also adopted. Within the framework of this decree, the concept is implemented in stages on the basis of "road maps", which are individually approved by the Cabinet of Ministers of the Republic of Uzbekistan for a period of three years, based on the results achieved, target indicators and the main directions for the corresponding period of Environmental Protection. The concept sets the priorities of state policy in the field of Environmental Protection in the specified period, while their implementation allows to ensure the sustainable development of the state in the interests of future generations. Objectives and objectives of the concept: to ensure the favorable state of the environment as a necessary condition for improving the life and health level of the population of the Republic of Uzbekistan; sustainable economic development due to the introduction of innovative technologies that reduce the negative impact on the environment and the health of the population; consists in ensuring the rational use of environmental objects and the recovery of biological resources. Determining the potential and characteristic of wind energy in the effective development of the use of wind energy is the first step, and the assessment of wind energy resources is an integral part of the feasibility study of wind station projects. The validity of the assessment directly affects the cost and economic advantage of electricity generation [2]. The characteristic of wind variability by Time is considered an important factor in describing the distribution function of the wind speed frequency for a given area [3]. Two different methods are usually used to determine the wind speed distribution: firstly the method of rows in time [4] and secondly the method of statistical analysis [5]. The result of the time-by-Time Series method can be more accurate because it is based on preliminary data on wind speed. However, in large volumes of data, the process of analysis by the method of rows by time is complicated. The statistical analysis method uses finite parameters to describe the wind speed distribution, which is an efficient and simple method [6]. The distribution function of the wind speed probability is critical to estimating wind energy systems. In reality, the distribution function of the probability of energy characteristics of wind energy systems depends on whether the wind speed corresponds to the change. By mastering the wind speed distribution, it is possible to check the technical and economic feasibility of any area. The two-parameter Weibull distribution function is currently a generally accepted

efficient way to represent the wind speed distribution [7]. Wind power and its technical potential for 12 regions of Uzbekistan were evaluated by Arian Bahrami and his team using the application of the Weibull distribution function to wind speeds of 10 meters altitude [8]. Globally, as of 2020, the share of renewable energy sources (QTEM) in global electricity generation was 26%, while this indicator was 38% by the end of 2021 [10].lobally, as of 2020, the share of renewable energy sources (QTEM) in global electricity generation was 26%, while this indicator was 38% by the end of 2021 [9]. The decision to decommission fossil fuel power plants, which require large reserves of non-renewable energy, is a carbon-limiting one for many countries. This is especially evident in countries that are almost entirely dependent on the production of large volumes of fossil-fuel electricity. 2021 marked a strong transition year to renewable energy use. In doing so, nearly 257 GW of renewable energy was added globally, increasing the renewable energy reserve by 9.1 percent and accounting for an unprecedented 81 percent of global energy additions[10]. The use of renewable energy is also increasing in the Republic of Uzbekistan. Work in this regard can be seen from the reforms carried out in the last year, including: in 2021, the first solar power plant in our country with a capacity of 100 MW was launched in Navoi Region [11], and after May 2022, another solar power plant with a capacity of 100 MW was launched in Nurabad District of Samarkand region [12]. The law of the Republic of Uzbekistan “on the rational use of energy”of April 25, 1997 regulates the activities of legal entities and individuals related to the production of fuel, fuel, heat and electricity, their processing, storage, transportation, distribution and expenditure. This law promotes the development and implementation of energy-efficient technologies, the extraction and generation of cheaper petroleum products, natural gas, coal and other types of natural fuels, to ensure the efficient and environmentally friendly use of energy when generating and using it; to ensure that the amount and quality of energy generated and spent is accurately, correctly, uniformly measured and taken into account; it aims to carry out state inspection and control over the efficient generation and consumption of energy and its quality, the technical condition of energy equipment, energy supply and energy expenditure systems. The law defines the legal status of specially authorized state bodies, their powers, the issues of generation, transmission, distribution, sale and consumption of electricity are expressed in separate chapters, the rights and obligations of electricity consumers are established. For the first time, the law established rules for stopping the transmission of electricity to consumers. According to it, the enterprise of regional electricity networks or its electricity supply enterprise can stop the transmission of electricity to the consumer in accordance with the established procedure when the regime established by the relevant contract is violated, electrical devices are arbitrarily connected to regional electricity networks, when there is an intentional injury to electricity accounting devices or when the indicators of[13]

Analysis of the results of the study According to some scientifically based data, an average of 1600 kilowatt hours of solar energy per square meter of the Earth's surface in one year falls in Uzbekistan. This figure is 1044 kilowatt hours in European countries, such as the city of Yekaterinburg (Russia).nalysis of the results of the study According to some scientifically based data, an average of 1600 kilowatt hours of solar energy per square meter of the Earth's surface in one year falls in Uzbekistan. This figure is 1044 kilowatt hours in European countries, such as the city of Yekaterinburg (Russia). If 15% of this solar energy is converted

into electricity through modern photo power stations, then in our country it is possible to generate 200-240 kilowatt hours of electricity per year through one square meter of solar panels, and in Yekaterinburg-157 kilowatt hours. In the climatic conditions of Uzbekistan, 6,000 square meters of solar panels will be required to obtain 1 megawatt of electricity in the summer period, while in the conditions of the city of Yekaterinburg, 12,000 square meters of surface solar panels will be needed. So, it can be understood from this that the cost for the construction of a solar photovoltaic plant in the southern region of our country will also be twice as low. In general, all types of solar devices work with high efficiency on the territory of our country. Taking into account the potential of existing renewable energy sources in our country, the process of rational use of natural fuel-energy resources in the regions and the environmental situation are being controlled by the introduction of "green economy" mechanisms. Large-scale reforms are underway to promote the use of renewable energy in the economy and social sectors. In particular, the decisions of the president of the Republic of Uzbekistan dated May 26, 2017 "on the program of measures for the further development of renewable energy in 2017-2021, energy efficiency in the sectors of the economy and the social sphere", dated November 8, 2017 "on measures to ensure the rational use of Energy Resources"set several tasks. In accordance with this, extensive work has been carried out in priority areas such as reducing energy and resource costs in the economy, the widespread introduction of energy saving, the expansion of the use of renewable energy sources, the increase of energy efficiency in various sectors of the economy. Experts believe that thanks to the construction of such unique solar photovoltaic plants in our country, there is an opportunity to generate a total of 600 billion kilowatt hours of electricity. This means 8 times more than the total energy demand in our country. The new Uzbekistan development strategy for 2022-2026 also sets priorities for increasing the energy efficiency of the economy by 20 percent and reducing the amount of harmful gas released into the air by 20 percent by actively introducing green economy technologies into all sectors, in addition to rapidly developing the national economy in the near future and ensuring high growth rates. For this purpose, projects are underway to build large-capacity solar photovoltaic and wind farms, and further development of hydropower continues. Reforms in this regard are aimed at solving such important tasks as further reducing the energy capacity of our country's gross domestic product, the cost of production and expanding the use of renewable energy sources. The new Uzbekistan development strategy sets out to increase the electricity production figure in our country by an additional 30 billion kilowatt hours by 2026, to bring the total to 100 billion kilowatt hours, to introduce modern "green" and energy-efficient technologies for the rapid development of electricity production capacity, to save about 3 billion cubic meters of natural gas per year in return for Conclusion In conclusion, ensuring the energy security of a country is a necessary condition for maintaining national energy security at the required level, based on the effective use of energy potential. To manage the state of energy security, the following works are carried out; - formation of an effective legal framework for all energy sectors, and ensuring control of energy security; - provision of strategic reserves of energy resources in the energy sector, development and implementation of renewable energy sources; - modernization of outdated technical and technological bases in the energy sector; To date, it is advisable to create environmental, organizational and legal conditions that ensure the reliable and effective

functioning of the energy supply system in our country. In a word, the reforms carried out will serve to develop the energy sector and further improve the well-being of our people.

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