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Dynamics of Renewable Energy Contracts: Addressing Energy Needs and Environmental Concerns in Legal Transactions

Abstract

Renewable energy agreements, which are an important part of modern legal transactions, ensure that energy needs are met in a sustainable and environmentally responsible manner. This article examines the role of renewable energy agreements in legal transactions and solutions for meeting energy needs in a sustainable and environmentally responsible manner. The limited nature of energy resources and the environmental impacts of fossil fuels have increased the importance of renewable energy resources. In this context, the place and effects of international agreements and national legislation in the field of renewable energy are examined. The aim of the article is to analyze the positive effects of the use of renewable energy resources on environmental sustainability and economic development, to evaluate the effectiveness of legal regulations in this field and to investigate ways to improve current practices. The European Union's directives on renewable energy and the success of energy performance contracts in other countries are examined with examples. A special emphasis is placed on the development of renewable energy policies in energy exporting countries such as Azerbaijan, and legal and institutional regulations are evaluated in this direction. In addition to the role and economic benefits of renewable energy resources in combating climate change, contract models that increase energy efficiency are also included in the scope of the research. The article aims to provide practical solutions to achieve sustainability goals in the field of energy.

Keywords: *energy, energy resources, energy contracts, natural gas, coal*

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Bərpa olunan enerji müqavilələrinin dinamikası: hüquqi əməliyyatlarda enerji ehtiyacları və ekoloji narahatlıqlar

Xülasə

Müasir hüquqi əməliyyatların mühüm hissəsi olan bərpa olunan enerji sazişləri enerji ehtiyaclarının davamlı və ekoloji cəhətdən məsuliyyətli şəkildə ödənilməsini təmin edir. Bu məqalə bərpa olunan enerji sazişlərinin hüquqi əməliyyatlardakı rolunu və enerji ehtiyaclarını davamlı və ekoloji cəhətdən məsuliyyətli şəkildə qarşılamaq üçün həll yollarını araşdırır. Enerji resurslarının məhdud təbiəti və qalıq yanacaqların ətraf mühitə təsiri bərpa olunan enerji resurslarının əhəmiyyətini artırmışdır. Bu kontekstdə bərpa olunan enerji sahəsində beynəlxalq müqavilələrin və milli qanunvericiliyin yeri və təsiri araşdırılır. Məqalənin məqsədi bərpa olunan enerji mənbələrindən istifadənin ekoloji dayanıqlığa və iqtisadi inkişafa müsbət təsirlərini təhlil etmək, bu sahədə hüquqi tənzimləmələrin effektivliyini qiymətləndirmək və mövcud təcrübənin təkmilləşdirilməsi yollarını araşdırmaqdır. Avropa Birliyinin bərpa olunan enerji ilə bağlı direktivləri və digər ölkələrdə enerji icrası müqavilələrinin müvəffəqiyyəti nümunələrlə araşdırılır. Azərbaycan kimi enerji ixrac edən ölkələrdə bərpa olunan enerji siyasətinin inkişafına xüsusi diqqət yetirilir və bu istiqamətdə hüquqi

və institusional qaydalar qiymətləndirilir. İqlim dəyişikliyi ilə mübarizədə bərpa olunan enerji mənbələrinin rolu və iqtisadi faydaları ilə yanaşı, enerji səmərəliliyini artıran müqavilə modelləri də tədqiqatın əhatə dairəsinə daxildir. Məqalə enerji sahəsində davamlılıq məqsədlərinə nail olmaq üçün praktik həllər təqdim etmək məqsədi daşıyır.

Açar sözlər: *enerji, enerji resursları, enerji müqavilələri, təbii qaz, kömür*

Introduction

One of the most important and indispensable needs of humanity is energy. Today, energy consumption per capita is used as a measure of development. In this century, the need for energy has increased considerably with the increasing population and developing technology. Currently, one of the most important problems in the world is the availability and continuity of energy.

Energy, defined as the ability to do a job, is one of the basic inputs of the economy and a healthy development; It is possible to have cheap, sufficient, quality and reliable energy sources (Choshkun, 1982, p. 58).

Research

Energy, which has become an indispensable element of our lives, has been one of the factors that most affected economic development since the second half of the 20th century. With this feature, energy, which is a strategic source of life for every country, has become one of the basic tools of development, especially in developing countries. The problem of how to meet the energy need in the future, which is increasing in parallel with its importance, has led countries to search for new energy fields. Thus, energy, which is an important element of international power struggles, conflicts and also international cooperation, has gained an international dimension. Energy will continue to be at the forefront of the economic and social development of countries in the coming centuries (Prugh, Flavin, & Sawin, 2005, p. 100).

Exploring Renewable Energy Contracts: Addressing Energy Needs and Environmental Concern

The introduction of renewable energy sources into the extraction, storage, and utilization of various types of energy is currently considered one of the most promising directions. An analysis of key statistical data and theoretical developments indicates the growing relevance of regenerative energy as a solution to global challenges in energy and environmental sustainability.

Renewable energy sources are characterized by their ability to replenish naturally, primarily through the flow of solar radiation reaching the Earth's surface, which ensures an almost inexhaustible supply in the foreseeable future. Energy sources such as solar, wind, hydropower, and bioenergy are already being actively utilized and are gaining popularity as environmentally friendly and sustainable alternatives to fossil fuels.

Examples of renewable energy use include its integration into power grids, providing energy to remote areas, and applications in industry. These approaches contribute to reducing carbon dioxide emissions, improving quality of life, and ensuring sustainable development.

Thus, the potential of renewable energy sources is evident, and their continued development serves as a key solution to addressing global energy and environmental issues.

There is currently positive legislative and practical experience in transitioning to renewable energy sector resources. Among the countries where the energy sector is largely supported by regenerative sources, several members of the European Union stand out, such as Germany and Denmark. Additionally, political and legal measures to promote the development of renewable energy sources have been implemented in countries like Switzerland, Canada, Iceland, and others.

The main fossil fuels are oil, coal and natural gas. In the world's current energy consumption, oil ranks first with a share of 37 %, followed by coal with a share of 27 % and natural gas with a share of 24 %. Today, strategies for the supply of oil and natural gas play a major role in the development and foreign policies of countries (BP, 2005).

Despite all the efforts spent on searching for alternative energy sources and developing technologies used in the field of energy, most of the increases in energy demand in the coming period are expected to be met by oil and natural gas.

Energy resources can be classified in many different ways (such as material state, storable, convertible, renewable, usable, solar-based, etc.). Classification based on usability and renewability is common (Karaosmanoghlu, 2004, p. 14).

They are energy sources that cannot be regenerated when consumed as an energy raw material. Fossil energy resources such as coal, oil and natural gas, and uranium and thorium, which are nuclear energy raw materials, are non-renewable energy resources.

The first political document establishing the goals for the development and use of renewable energy was adopted at the European Union level in 1997. Titled *"Renewable Energy: White Paper Laying Down a Community Strategy and Action Plan"*, it aimed to achieve a 12 % share of renewable energy implementation across the European Union by 2010.

This document contained an action plan aimed at creating fair market opportunities for the use of renewable energy sources, ensuring them without excessive financial burden, and identified the following measures: non-discriminatory access to the electricity market; tax and financial incentives and regimes; new directions for the development of bioenergy for transport, heating and electricity; measures to increase the share of biofuels market, promotion of biogas use and development of solid biomass markets; promotion of renewable energy sources (for example, solar in the construction sector, both in the modernization of buildings, facilities, and in new construction cases.

One of the first legal documents of the European Union was the *EU Directive on Electricity Production from Renewable Energy Sources* (2001/77/EC), which aimed to promote the use of renewable energy sources in electricity production. This legislative act was more programmatic in nature, as it set national targets for renewable energy production for individual member states.

Subsequently, the *EU Directive on Electricity Production from Renewable Energy Sources* (2001/77/EC) was updated with the adoption of another regulatory document. Further legal development in the field of renewable energy is associated with the adoption of a specific regulatory act, the *Renewable Energy Directive* (2009/28/EC).

Natural gas is an energy source formed by the natural transformation of organic substances in the lower layers of the earth over millions of years, changing under pressure and heat and reaching their current state. It is among the fossil fuels that can be used without any processing as it is extracted from its source (TMMOB, 2006, p. 130).

One of the most critical points of our age is the efficient use of energy. Considering the limited energy resources despite the increasing energy demand and the effects of energy production on climate change, energy efficiency is not a choice but a necessity. With steps such as the oil crisis in the 1970s, the 1992 Rio Conference, the 1997 Kyoto Protocol, and the Paris Agreement that came into force in 2016, climate change and energy efficiency issues have gained importance and awareness among the masses.

All of this contributed to the development and justification of one of the main concepts of the 21st century – the concept of sustainable development, which has become the ideology for the world's development in the coming years.

According to Article 6 of the Paris Agreement, the commitment to sustainable development became a priority for the subsequent policies of the countries that signed it, with voluntary participation and no restrictions on greenhouse gas emissions, where the participants set their own individual targets.

The Agreement established the need for "adaptation measures" (Article 2), defined as the actions taken by a country to reduce vulnerability to climate change and enhance its ability to adapt to its negative consequences. It is impossible to consider the adoption of adaptation measures without reducing the carbon footprint. Given the large number of factors influencing a country's carbon footprint, we will consider just one – greenhouse gas emissions and the possibility of reducing such emissions.

The spread of energy performance contracts is parallel to the development of energy service companies (ESCO). Energy service companies can be defined as natural or legal entities that provide energy services or other energy efficiency improvement measures and accept a certain degree of financial risk in doing so (Official Journal of the European Union, 2006).

Country policies are one of the cornerstones that direct the development of ESCO activities, and different countries have carried out different legal infrastructure studies according to their sector conditions. For example, in some countries such as China, while government policies increase the private sector's tendency towards ESCO, there are elements that hinder the development of the ESCO market in the public sector (IEA, 2018). On the other hand, the USA has carried out extensive work to encourage the use of energy performance contracts in the public sector, such as the development of standard contract documents, changes in purchasing procedures and the provision of project facilitators (Garbuzova-Schliftern & Madlener, 2019, p. 565). As a result, the ESCO market in the USA has found the opportunity to develop in the public sector.

A legal and financial framework has been drawn for the energy performance contract market with the EU-Energy Performance Commitment Campaign (EPCC) initiated by the European Commission. Energy performance contracts in Russia were introduced by federal law No. 261 (Garbuzova-Schliftern & Madlener, 2019, p. 570). However, it could not develop at the desired pace as a result of banks considering ESCO applications as risky.

When we look at the Asian continent, there are various financial programs to encourage the use of energy performance contracts in countries such as Singapore and Taiwan (Lee & Lam, 2016, p. 118). However, the real significant share in the energy performance contracts market belongs to China. When we look at the development of the energy performance contract in China, it can be seen that the China Energy Saving Incentive Project in 1996 was an important milestone. Financial assistance was received from the Global Environment Fund for the project in question, and energy management companies were established in three cities: Beijing, Liaoning and Shandong. At the 2010 Copenhagen Conference, the Chinese government committed to reduce carbon emissions by 40-45 % by 2020, which also increased government support for energy performance contracts. As a result of these and similar developments over the years, China has gained its current significant share in the energy service and energy performance contracts markets (Jinrong & Enyi, 2011, p. 199).

Energy efficiency began to gain increasing importance among international energy policies in the 1970s. The United Nations held its first environmental conference in Stockholm in 1972 (Kaya, 2020, p. 170). Then, the oil crises that occurred in 1973 and 1979 made more people aware of the importance of energy efficiency. Climate change gained greater recognition with the 1992 Rio Conference and the 1997 Kyoto protocol, and targets were set to control climate change with the Paris Agreement, which came into force in 2016. These developments have accelerated energy efficiency investments. With the increasing importance given to energy efficiency investments, energy performance contracts have also come to the fore as a financing method. When we look at the structure of EPS, the customer has the opportunity to save on energy costs while improving his social image and increasing his value. On the other hand, the implementing company can establish a long-term partnership based on mutual trust and have the opportunity to conclude new contracts with the successful results achieved. In summary, an energy performance contract can provide multifaceted benefits such as the creation of new job opportunities for both the customer and the energy service company, the spread of more innovative and efficient applications, reduction of energy demand, multifaceted increase in building/company value and competitive advantage (European Union, 2019, p. 45).

Despite being rich in energy resources and recognized as an energy resource exporter worldwide, the use of renewable energy sources has always been a focal point in the Republic of Azerbaijan. One of the key objectives of the energy security policy implemented under the leadership of President Ilham Aliyev is to strengthen the use of renewable energy sources in our country.

As a continuation of the work done in this area, by the Decree No. 1159 of the President of the Republic of Azerbaijan dated September 22, 2020, the State Agency for Renewable Energy Sources under the Ministry of Energy of the Republic of Azerbaijan was established, and the Agency's Charter was approved.

In order to develop the renewable energy sector in our country, improve the legal and institutional environment in this area, and create a favorable policy, relevant laws and regulatory legal acts have been adopted. In recent years, work in this area has continued, and the law titled “On the Use of

Renewable Energy Sources in Electricity Production" (№ 339-VIQ, dated May 31, 2021) has been approved, which makes a special contribution to the development of renewable energy.

In Article 5 of the document *"Azerbaijan 2030: National Priorities for Socio-Economic Development"*, approved by the Presidential Decree on February 2, 2021, issues related to climate change and combating it, as well as the application of renewable energy principles based on the green energy space in all sectors of the economy, have been reflected. According to the priorities for the country's socio-economic development, more attention is now being paid to the use of renewable energy sources and the expansion of "green" technologies in both the present and future periods. Within the scope of this work, studies are ongoing throughout the country to identify and prioritize areas with renewable energy potential. These National Priorities are also of special importance in the implementation of commitments arising from the UN's "Transforming Our World: The 2030 Agenda for Sustainable Development".

Conclusion

Today, despite the increasing energy need due to the development of economies, the limited energy resources have created the necessity of ensuring continuity in energy resources.

Energy, which is indispensable for economic and social development, is of critical importance, especially for countries with limited domestic resources. Accordingly, in balanced and advanced development, energy is the determining factor in the welfare of people and the development of the country's economy. Energy demand; Providing sufficiently efficient, reliable, economical, continuous and environmentally friendly conditions in every period should be among the main objectives. The key to remaining as independent and diversifying as possible in terms of energy potential is the development of own resources.

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