ISSN NO: 2770-4491
Date of Publication:12-12-2022

Distinctive Features of Development and Management of Renewable Energy Resources Projects

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Annotation: The article examines the opinions of the world's leading scientists on the peculiarities of the development and management of projects related to the creation of renewable energy resources, the specific characteristics of the development and management of projects related to the creation of renewable energy resources, The growth trend of renewable energy sources in the world in 2014-2020 was analyzed, the experiences of developed countries were analyzed and compared, and justified conclusions and proposals were developed regarding the specific features of the development and management of projects related to the creation of renewable energy resources. and recommendations for use in our country are given.

Keywords: Renewable energy, resource, energy, biogas, organic waste, Green economy.

Introduction

The implementation of programs aimed at structural change of industrial sectors in our country, production and export of high-quality, competitive products to world consumer markets, deepening of the diversification process, and modernization show high growth indicators in our economy. In recent years, the development of the oil and gas, consumption, construction, energy, and metallurgical sectors in the economy of Uzbekistan has given high results. Currently, the depletion of oil, coal and gas fields is leading to a global energy disaster. For this, renewable energy sources and energy conservation are the salvation for a better life in the future, ensuring the survival of the majority of the world's population.

Devices with the ability to obtain energy from inexhaustible or renewable natural resources eliminate dependence on traditional raw materials. A complete transition to renewable energy sources will allow to eliminate the problem of future energy shortages. All the achievements of the modern world economy are based on oil, gas, coal and other similar natural resources. Most of the activities in our lives, from riding the subway to making tea in the kitchen, are ultimately aimed at burning off the product of this historical development. The main problem is that these easily accessible energy resources are not renewable.

Literature review.

In the process of analyzing the literature on the topic, we witnessed that several leading economists and specialists conducted scientific research on the specific features of the development and management of projects related to the creation of renewable energy resources, which are as follows. For example, Indian economist S.P. Raghuvanshi assessed the impact of renewable energy development on climate change in his study entitled The Importance of Renewable Energy Sources in Mitigation of the Complications of Climate Change. His research is based on empirical observations, in which the increase in the use of fuel and energy resources is cited as the factor that has had the greatest impact on climate change over the past 50 years. Nevertheless, the author did not study the ways of encouraging the use of renewable energy sources [1].

Swedish scientist T. Jackson in his study "Renewable energy: prospects for implementation" highlighted the economic, institutional and environmental aspects of the use of renewable energy sources[2]. He considered the issues of reducing technological costs in the field using the method of logical analysis. However, the study did not analyze the economic and environmental benefits of renewable energy with precise calculations.

British economist M. Grubb studied alternative energy development strategies in EU member states in his research entitled "European renewable energy strategies"[3]. In his research, the economist evaluated the economic processes in the field of renewable energy in the European Union member states and combined the general features of the national strategies of the countries based on the systematic approach[4].

Also, in the studies of Russian economists T.N. Sedash "Renewable energy sources: promotion in

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Russia and abroad" and I.A. Grekhukhina "Economic mechanisms of development of renewable energy" using monographic analysis and grouping methods, encouraging the use of renewable energy sources in all sectors of the national economy The main conditions and economic mechanisms of promotion are presented. At the same time, as a shortcoming of the study, the difficulties and problems that arise in the implementation of the methods of encouragement presented in it at the national level are not analyzed[5].

In many modern scientific and technical literatures, in particular, in the scientific developments of Russian scientists R.B. Akhmedov and Dj. and included low-potential thermal energy and geothermal energy[6].

The practical manual written by our local scientists, K. Shodimetov, describes the possibilities of building alternative energy sources of different capacities, how to use them, and the possibilities of using renewable energy sources in our country[7].

H.K.Zaynuddinova, Sh.K.Niyozov, Sh.Ashirov, R.Sh.Daminov, E.Ikromkhanov Effective use of solar energy in farms using renewable and alternative energy sources, providing soil radiation and heat when planting agricultural crops their propositional considerations on how to place them in relation to the sun are explained in detail[8].

The textbook written by T. Sh. Majidov focuses on the types of non-traditional and renewable energy sources (sun, wind, wave, geothermal, biomass), the largest power plants in the world, and the history of the development of hydropower in our country[9].

In the textbook written by foreign scientists R. V. Gorodov, V. E. Gubin, A. S. Matveev, the main directions of development of renewable energy sources, methods of converting wind, solar, geothermal energy, as well as ocean energy into electrical and thermal energy, taking into account the latest advances in technology and equipment 'considered. Special attention is paid to the comparison of traditional and non-traditional energy sources, the dynamics of energy consumption and the development of energy facilities, as well as the environmental problems of non-traditional energy[10].

Research methodology.

Economic research methods such as studying the research conducted by world scientists and economists on the specific features of the development and management of projects related to the creation of renewable energy resources, data collection, analysis of collected data, synthesis, and logical thinking were widely used.

Analysis and discussion of results.

In renewable energy sources - organic waste (energy obtained due to the use of animal excrement, household waste, agricultural and forestry plant residues and municipal wastewater), hydropower potential of rivers, reservoirs and irrigation canals, solar, wind energy, tidal and ocean wave energy, geothermal energy, alternative forms of energy.

Theoretically, renewable energy sources create great opportunities by using them on a large scale, primarily by preventing an environmental catastrophe. However, the financial and economic costs associated with the use of renewable energy sources, the conditions that must be met for the production of such energy, cause the need for these sources to pass to the second level.

It is known that even if we ignore the problem of global anthropogenic climate warming, renewable energy opportunities will remain limited in the near future. In the leading countries that use such devices, renewable energy sources of a size that meet the needs of a large settlement, organization or industrial enterprise have been established for regular production of energy, but in our republic, such energy sources (macca stalks with dumbbells, wheat ears and stalks , blue grass and other types of plant silage, potato mash or rye flour) is on the table of first consumption needs. cannot provide. Today's need for renewable energy sources of our republic requires that facilities located in remote and hard-to-reach districts can provide small-scale energy production or be supplemented with traditional (non-renewable) energy sources.

In addition, we must not forget that the environmental costs associated with many types of renewable energy sources are also increasing. In order to reduce the negative factors around the places where solar photovoltaic systems and wind generators of different capacities used for electricity production are installed, it is necessary to properly design them. It has been concluded that hydrogen energy is not very

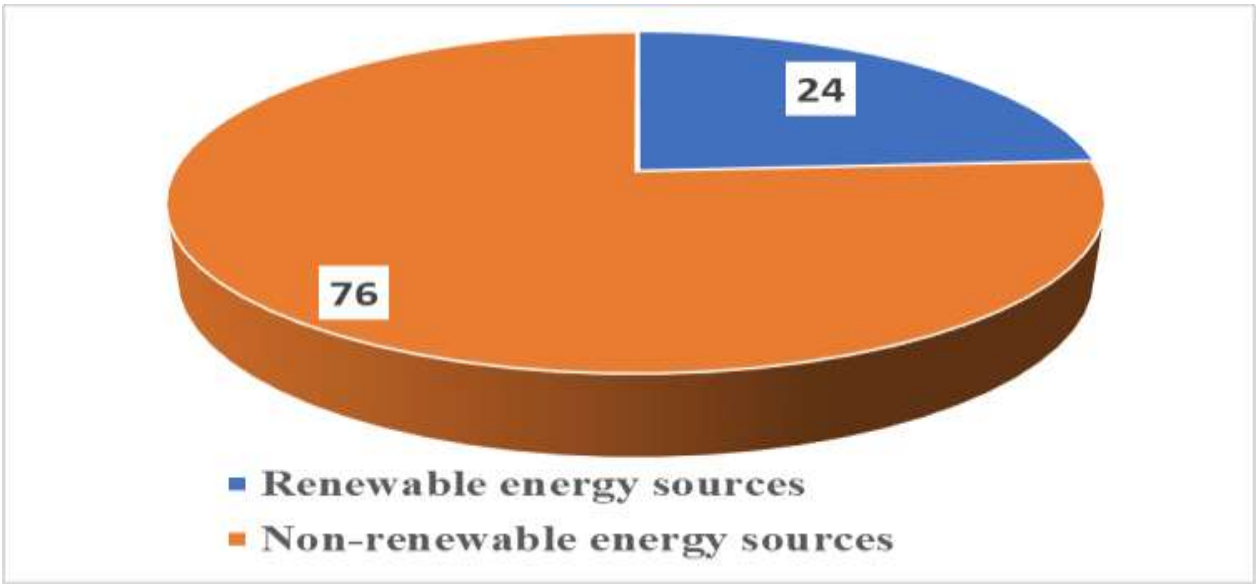
ISSN NO: 2770-4491
Date of Publication:12-12-2022

environmentally friendly at the moment. However, we have seen that the improvement of hydrogen extraction processes, when we apply it directly to internal combustion engines without collecting it, reduces the unpleasantness, and the fact that many aspects of this technology are still open and its further improvement and development is a positive situation. taking into account that it is changing, we need to use energy more wisely.

The main goal of using renewable energy sources is not to reduce the reserve of valuable resources, to limit the pollution of the environment with greenhouse gases and the migration of salts around the world, not to have a negative effect on the erosion of the earth's surface, and not to produce energy in vain.

Qayta tiklanadigan energiya manbalari aylanma energiyaning mavjud yoki davriy manbalarining barqarorligiga asoslangan manbalardir. Qayta tiklanadigan energiya insonning maqsadga yo‘naltirilgan faoliyatining natijasi emas va bu bir-biridan farq qiladi.

The share of renewable energy sources (including hydropower) in the global energy system, which has been growing rapidly since the late 2010s, has increased by almost 1 percentage point to nearly 25% in 2020. Wind and solar have grown with climate policies in the European Union, the United States, China, India, Japan and Australia, and a sharp drop in the cost of building solar and wind installations, enabling the expansion of renewable capacity in developing countries (Figure 1)



1 picture. Total renewable energy in the world contribution to energy (2020 year)[11]

The share of renewable energy sources in the EU remained stable in 2020, as a significant increase in renewable energy production in Germany and the UK was offset by unfavorable hydrological conditions in southern Europe (France, Italy, Spain) and an increase in the distribution of energy in the world practice. shows the trend (Figure 1.2)

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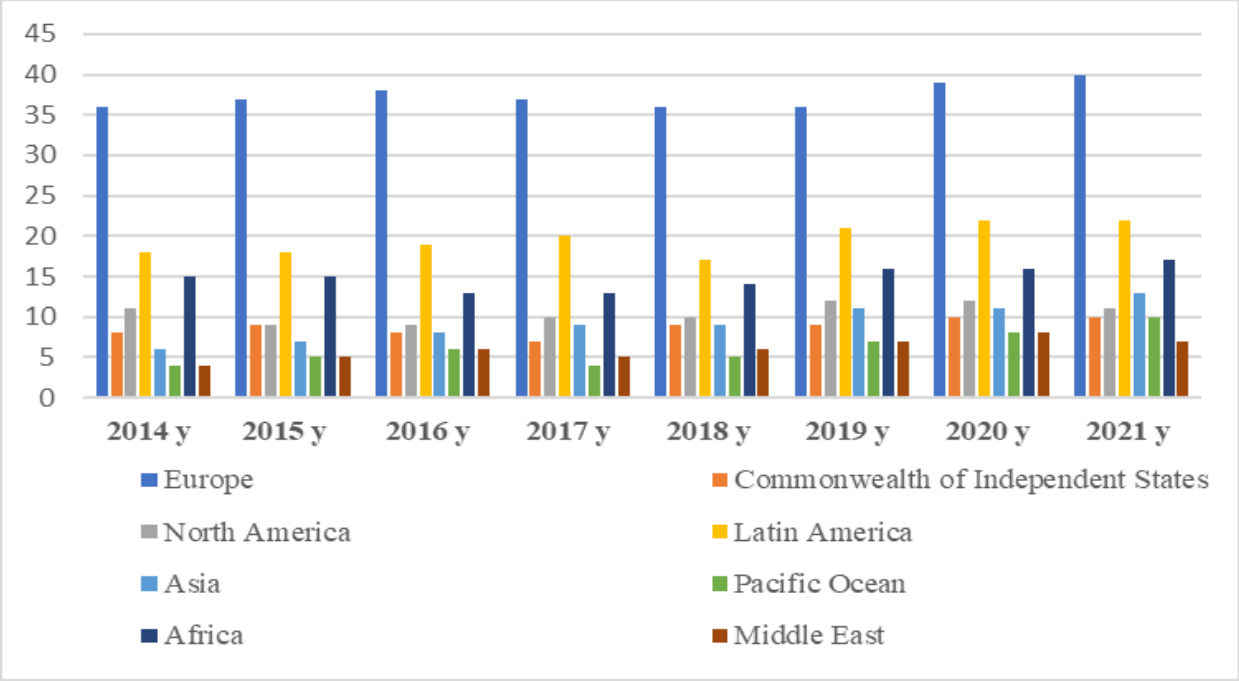

Figure 2. Growth trend of renewable energy sources in the world in 2014-2020 [11]

Among the types of non-conventional and renewable energy sources used by developed countries in the world, the following can be included:

1. Solar energy;
2. Energy obtained from winds of different speeds;
3. Hydropower (medium-small and micro-hydropower);
4. The energy of waves and the energy of rising and falling of water levels;
5. Energy of various currents in the ocean and seas;
6. Energy of geothermal waters and geysers;
7. Biological gas energy obtained from organic waste;
8. Energy of solid and liquid (sewage) organic waste coming out of the city;
9. Energy obtained from underground through heat pumps;
10. Lightning energy;
11. Energy obtained from oil plants.

In general, on the basis of epidemiological and ecological requirements, natural clean energy is produced only by energy sources that exist in nature, and they are called renewable energies. Therefore, such sources are called non-traditional and renewable energy sources[10].

Changes in the field of energy supply in the world practice pose a great threat to the sector. It is known that many people who are afraid of losing their jobs (closure of coal and other energy mines) work in this field in many countries of the world. In addition, the economy of many European countries depends on coal. However, the use of non-renewable energy sources cannot last long, and it is inevitable that it will shift to renewable - Green energy sources. And this situation can be seen in the example of Sweden, one of the developed countries of the world, where the energy economy once played an important role. Moreover, in a globalized world where large countries are increasingly using green energy, it is inevitable in the competitive environment.

In our analysis, non-renewable energy is the main source of energy in most countries. 80% of Poland's energy is provided by coal. This means that a lot of jobs depend on it, and that's why people don't want to switch to other energy sources.

Skeptics believe that a high proportion of renewable energy (PRE) can be successfully integrated into electricity systems around the world without affecting grid stability.

By 2020, the use of Green Energy has increased significantly in many regions of the world. Denmark (52.9%), Uruguay (28.1%), Germany (26%) and Ireland (25.2%) are responsible for the share of wind and solar energy.

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In certain regions, renewable energy sources began to be integrated into energy systems with higher indicators in a short period of time. In South Australia, wind power has supplied more than 100% of electricity demand, with up to 44% of solar energy being converted from wind over time. Other examples include Germany achieving 66% of its energy load using wind and solar. In the US state of Texas, 54% of the energy load was obtained from wind energy. In the country of Ireland, 60% of the energy load has been obtained from wind energy. The need for renewable energy is urgent in all countries.

In the period of rapid development of the world, in the country of China, especially with the promotion of the country's heating, industry and transport electrification, great potentials of renewable energy are introduced here, because it helps to reduce excess costs (serves to maintain the balance between production and demand).

Excess electricity produced in a field in recent times is considered to be energy. It provided financial support to support the construction of four major transmission lines across most European countries.

Project selections of the new generation of solar energy devices showed record levels in a number of countries and very low indicators in some countries. In Germany, for example, this figure has decreased by 50% in the last two years and has fallen below $60 per MWh. The most expensive solar power purchase agreement in the United States went to a 150 MW project in Texas at less than $21 per MWh.

In markets as diverse as Canada, India, Mexico and Morocco, the price of wind power has fallen to around $30 per MWh. By the end of the year, the world record minimum price in the Mexican tender was below 20 MWh, and in Mexico it was 40-50% lower than the tenders in 2016.

It can be seen that all the above examples have a dramatic effect on the development of energy. At the beginning of 2018, 130 of the world's leading corporations joined the network of corporations dedicated to the use of 100% renewable energy. n 2016, 87 corporations were members of this indicator. The use of green energy from the United States of America and Europe, which develops renewable energy, has spread to different regions of the world, such as Burkina Faso, Chile, China, Egypt, Ghana, India, Japan, Mexico, Namibia and Thailand.

There are companies in Africa, Australia, China, Europe, India and the USA that are rapidly switching to green energy. For example, between 2014 and 2020, a single French joint venture sold $18 billion of coal and gas assets, with plans to spend $26 billion on energy efficiency and renewable energy by the end of 2018.

Such Green Energy Distributors help convert consumers into potential buyers. On a reciprocal basis, suppliers of intelligent micro-sales of solar energy on trading platforms have launched in Australia, Denmark, France, Japan, the Republic of Korea and the USA.

It should be noted that the need for widespread use of renewable energy sources in world practice is determined by the rapid growth of the demand for electricity, which will increase by 2 times by 2030 compared to 2000, and by 2050 by 4 times. Harmful nitrogen and sulfur oxides, carbon dioxide, radioactive and thermal pollution, etc. are the main indicator for abandoning proven reserves of organic fuel in the near future.

Conclusions and suggestions.

Renewable energy is a source of energy obtained from the energy flow of the environment. These include solar, wind, water resources, geothermal resources, biogas obtained from industrial and municipal, agricultural waste. Alternative energy sources play a major role in saving primary hydrocarbon resources in cities and ensuring energy security of the country. In my opinion, it is possible that in the near future, the sustainable development of a country will depend on the use of renewable energy sources in the energy sector.

The process of transition to the "green economy" is of particular importance for each country and is directly dependent on such characteristics as natural capital, human capital and the level of economic development of the country. Therefore, first of all, it is necessary to create a favorable environment (legal infrastructure, incentives, etc.) for the transition process. In short, in the conditions of limited resources and negative consequences of environmental problems, there is an objective need to create a "Green Economy". The transition to the "green economy" allows for effective use of resources, ensuring ecological balance, creating new jobs, and ensuring sustainable economic growth.

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In my opinion, the transition of Uzbekistan to the system of "Green economy" is first of all to establish production in various fields with the wide involvement of foreign investments in this system, and to introduce the population to the concept of "Green economy" regularly, to introduce a new system to the education system. it is necessary to include science and educational programs.

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