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Attracting Investment in the Electricity Sector of Uzbekistan is the Key to Development

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ABSTRACT Power industry is the basic sector of the economy, ensuring the development of the productive forces of the republic and improving the welfare of the population. At present, alternative energy is becoming in most cases the main solution to energy consumption, especially in rural areas remote from transmission lines. To modernize power lines by 2030, the network infrastructure of Uzbekistan needs large investments.The government sees the need to develop a long-term master plan for financing and investment in the energy sector.

As a result, the structure of generating capacities by 2030 will look like this: power units using natural gas will reach 16.3 GW or 51% of the total capacity (now 33%), hydroelectric power plants - 3.8 GW or almost 12% (now 16%), coal-fired power units, 2.6 GW or 8.2% (now -11%). The capacity of wind and solar power plants, which are not currently in commercial operation, is planned to be increased to 11.7 GW (5.3%) and 5 GW (more than 15%), respectively.

KEY WORDS: power industry, industry, investment, project, financing.

I.INTRODUCTION

Power industry is the basic sector of the economy, ensuring the development of the productive forces of the republic and improving the welfare of the population. Uzbekistan is one of the few countries that fully satisfy their needs with their own energy resources. The republic owns about 50% of the installed capacity of the Central Asian Unified Energy System (CAUES).The total installed capacity of the country's electricity sector is 11264 MW. In Uzbekistan, 39 power plants with a total installed capacity of 11,000 MW, with a potential capacity of electricity production in the amount of 55 million MW / h, are successfully operating.

II. RESEARCH METHODOLOGY

This article is analytical and research. The study is based on an analysis of key indicators of socio-economic development of the Republic of Uzbekistan. They are collected from various national and international scientific articles, the official website of the Ministry of Energy of the Republic of Uzbekistan on statistics, ministries of foreign economic relations, investments and trade of the Republic of Uzbekistan, data from the government portal of the Republic of Uzbekistan, etc.The amount of funds financed in the development projects of the energy complex of the Republic of Uzbekistan, sources of financing and types of investments is analyzed. The work uses the methods of statistical and economic analysis, the method of expert evaluation and the method of calculating economic efficiency.

III. DISCUSSIONS

The energy production necessary for the existence and development of mankind has a negative impact on nature and the environment. Today, scientists are faced with a problem, not only finding and developing new alternative energy sources, but also optimizing, lowering the energy intensity of existing energy capacities in production and everyday life.

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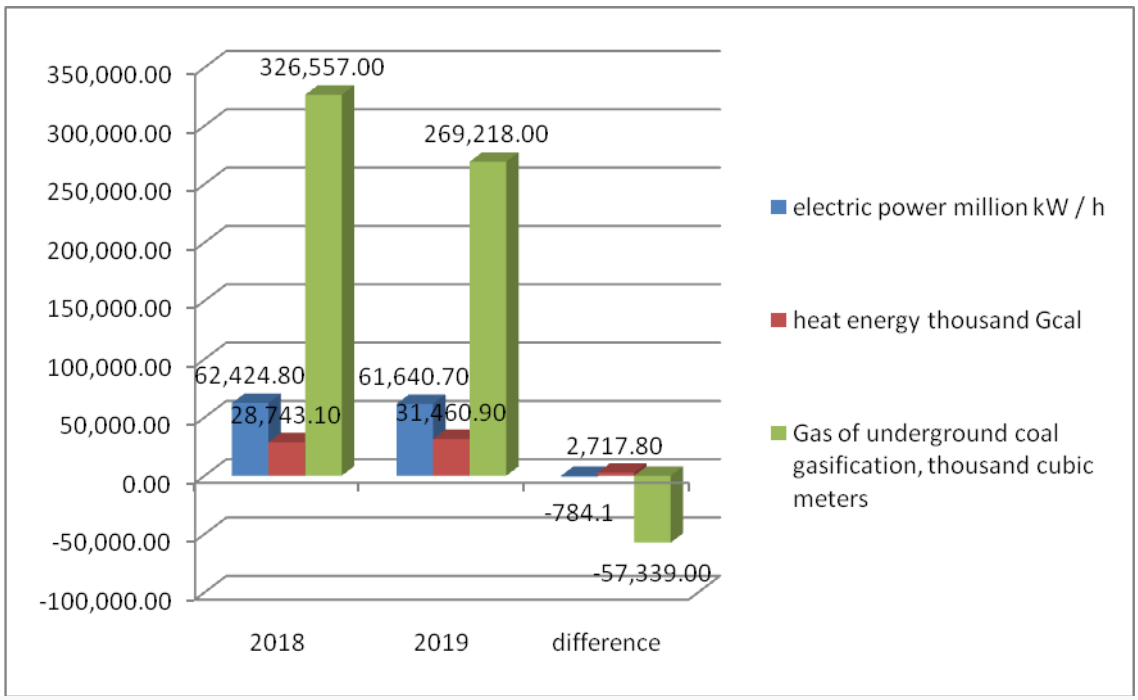

Fig. 1.Production by large enterprises of electricity, gas, steam and air conditioning of certain types of industrial products[1]

At present, alternative energy is becoming in most cases the main solution to energy consumption, especially in rural areas remote from transmission lines.

The favorable geographical and climatic conditions of Uzbekistan make it possible to actively use the energy of the sun to produce electric and thermal energy on an industrial scale. This is not only a promising source of renewable energy from a practical application point of view, but also very convenient and easy to use.Now the gross potential of solar energy of the republic can be estimated at 50973 million tons of oil equivalent (t.o.e.), and this is 99.7% of the total gross potential of all renewable energy sources studied in Uzbekistan today, technical potential is 176.8 million tons of oil equivalents (98.6% of the total technical potential of renewable energy sources). In absolute value, the annual energy of solar radiation entering the territory of the country exceeds the energy potential of proven reserves of carbon raw materials throughout Uzbekistan. For this period of solar energy, only 0.6 million t.o.e. is mastered (0.3% of technical potential). In terms of application, resource and simplicity, the use of solar energy is considered very promising.

Another type of renewable energy that is used in the world is wind energy. In the republic, the gross potential of wind energy can be estimated at 2.2 million t.o.e. Although, at the same time, the wind potential in local regions (Bekabad, Ustyurt) is not taken into account. The development of wind energy for agriculture is very promising, especially in remote areas. Thanks to wind energy, many farmers and village residents will immediately be able to feel an improvement in the quality of life, as additional opportunities for energy supply will positively affect the growth of well-being.

Agricultural waste is also a renewable energy source. Since waste is an excellent source of biogas. And biogas can be used not only for domestic purposes, but also for generating electricity. In Uzbekistan, to obtain energy in this way, the necessary structures have been developed. The main raw materials for biomass are agricultural waste and cotton stalks. They are distributed across all agricultural fields of the country. That is why it is economically viable to create autonomous plants that use agricultural waste together with waste from livestock farms and complexes for biogas production. Recently, the project “Assistance in the development of biogas technologies in Uzbekistan” came into force. It will allow the assessment and verification of the biogas production potential in the republic.

[1]compiled according to the source https://stat.uz/uploads/doklad/2019/yanvar-dekabr/ru/3.pdf

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Uzbekistan adopted a Law On the use of renewable energy sources. In 4th of December 2019, in Tashkent, under the auspices of the Ministry of Energy of the Republic of Uzbekistan, a Conference of investors in the field of renewable energy and energy infrastructure RENPOWER Uzbekistan 2019 was held.

The main tax incentives for equipment manufacturers and renewable energy developers, a set of new regulatory measures for the use of land for renewable energy projects, procedures for connecting electricity producers to a single power supply system and other topics were considered.

The first session presented a current overview of the energy market, regulatory changes and the transition to renewable energy in Uzbekistan. The second session was devoted to solar, wind, hydro and biogas projects and energy conservation programs. The government of Uzbekistan plans to quickly increase the share of electricity generated from renewable sources to about 21% by 2030-2031. Several 100 MW photovoltaic projects have already been planned, which are expected to be launched by 2021 as part of a major government initiative to achieve 1 GW of solar energy capacity [9].

To modernize power lines by 2030, the network infrastructure of Uzbekistan needs large investments. Today, losses in the power transmission system are 18%, and distribution losses are 14%. Given this, the government of Uzbekistan is developing a long-term master plan for financing and investment in the energy sector.

In the next five years, the conclusion of morally and physically obsolete power units at TPPs with a total capacity of 6.7 GW is planned. In this regard, it is necessary to build new power units with a total capacity of more than 26 GW. Deputy Minister of Energy SherzodKhodzhaev at the International Forum on Energy Reforms announced the amount needed for construction. According to Sh. Khojaev, financing will amount to approximately $ 35 billion.

Until 2030, it is also planned to create solar and wind power plants with a total capacity of 6.7 GW with bringing their share in the total volume of generating capacities to 21%.

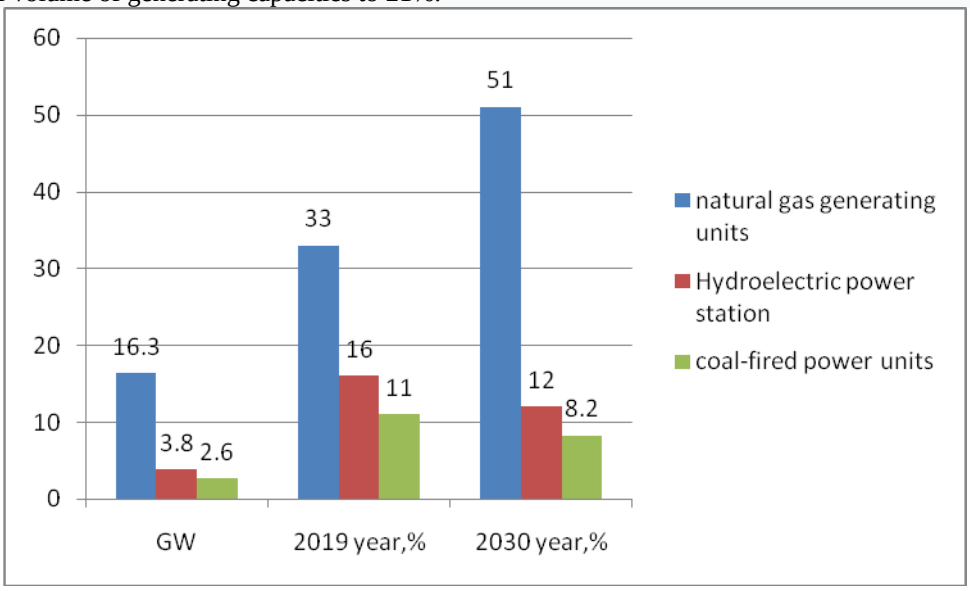

Fig. 2.Generating capacity structure by 2030

The capacity of wind and solar power plants, which are not currently in commercial operation, is planned to be increased to 11.7 GW (5.3%) and 5 GW (more than 15%), respectively. The total capacity of nuclear power plants will be 2.4 GW or 7.5% of the installed capacity [10].

To ensure a stable supply of this generated electricity, it is also necessary to build 2.7 thousand km of high-voltage power lines with the simultaneous construction of nine new substations, which will require investments of about $ 2.4 billion. In addition, reconstruction of existing transformer substations and more than 140 thousand km of transmission lines in distribution networks is required for a total investment of $ 9.9 billion. The necessary volume of investments cannot be made at the expense of existing state-owned companies. Therefore, government policy is aimed at attracting private investment.

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IV. INVESTMENT POLICY OF UZBEKISTAN IN THE ENERGY SECTOR

In may 2018, Uzbekistan signed an agreement on consulting services with the International Finance Corporation (IFC) to attract private investors to Finance, design, build and operate photovoltaic power plants worth up to $ 1 billion . The agreement's pilot project is the construction of a 100 MW solar power station in Navoi region. In November 2019, the tender for its construction was won by Masdarcompany from the UAE.

The Ministry of Energy of Uzbekistan jointly with the World Bank (WB) announced a tender for the construction of two photovoltaic stations with a capacity of 200 MW in Samarkand and Jizzakh regions

As a result of the new competition, one or two winners or a consortium will be selected for the construction of two stations on a public-private partnership (PPP) for a period of 25 years.

In early February, the Ministry of Energy announced a tender for the construction of a photovoltaic station with a capacity of up to 200 MW in Surkhandarya region under PPP conditions. This project is being implemented as part of a program with the Asian Development Bank, signed in August 2019. The project cost is about 800 million dollars.

On 18th of February, 2020, members of the leadership of the Ministry of Energy of the Republic of Uzbekistan held talks with the delegation of Hungary led by the Minister of Foreign Affairs and Foreign Trade of this country, Pierre Siyyarto. Negotiations took place within the framework of the 5th meeting of the Uzbek-Hungarian Intergovernmental Commission on Economic Cooperation.During the meeting, the parties discussed the possibility of cooperation in order to implement promising projects in the fuel and energy complex of Uzbekistan.

The Ministry of Energy and ACWA Power have signed three agreements for $ 2 billion, including the construction of a wind power station, as well as the purchase of electricity that will be generated by a gas turbine station, planned for construction by a Saudi company in Syrdarya. The Ministry of Energy signed two more documents with ACWA Power.One of them is about the construction of a wind power station with a capacity of 500-1000 MW for 0.55-1.1 billion dollars. As previously reported, the construction of a wind farm is planned in the Navoi region. A potential site for construction is being determined, and it is planned to launch the power plant in 2022.

On 11th of March, 2020, the Uzatom Agency held a meeting with the Ambassador of India to the Republic of Uzbekistan, SantoshJah, at which they discussed the development of cooperation in the field of the fuel and energy complex (FEC) of Uzbekistan, including in the field of peaceful uses of atomic energy.At the meeting, the agreements reached on the results of the visit of the delegation of the Uzatom Agency to India in February 2020 were discussed. in order to study the experience of India in the construction of nuclear power plants and establish bilateral cooperation in the implementation of the state nuclear energy program.At the same time, the Indian side said that there is the possibility of submitting grants for the introduction of solar panels for Uzbekistan. The Uzbek side voiced an invitation to participate in investment projects and an invitation to share, put forward proposals of the Chemical Industry of Uzbekistan.

V. RECOMMENDATIONS

In order to stimulate the use of renewable energy sources, the Law of the Republic of Uzbekistan “On the use of renewable energy sources” provides a number of benefits and preferences:

exemption of renewable energy producers from paying all types of taxes for a period of five years from the date of their state registration;

exemption of energy producers from renewable energy sources from paying property tax for renewable energy installations and land tax in the areas occupied by these plants (with a nominal capacity of 0.1 MW or more) for a period of 10 years from the date of their commissioning;

property tax of individuals is not subject to property owned by persons using renewable energy in residential premises with a complete disconnection from existing energy networks for a period of three years starting from the month of using renewable energy sources;

and persons using RES in residential premises with complete disconnection from existing energy networks for a period of 3 years starting from the month of using RES are exempted from land tax.

Also, energy producers from renewable energy sources and manufacturers of renewable energy plants have the right to create local networks (electric, thermal and / or gas) and conclude agreements with legal entities and individuals to sell electric, thermal energy and (or) biogas produced from renewable energy sources supplied through local network.

In order to further stimulate the use of renewable energy by the decree of the President of the Republic of Uzbekistan of 08.22.2019. No. PP-4422 provides for the implementation of the procedure according to which from January 1, 2020,

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the following activities are funded from the State budget of the Republic of Uzbekistan within the limits of annually approved parameters:
providing individuals with compensation in the amount of 30 percent of the costs of acquiring solar photovoltaic stations, solar water heaters, as well as energy-efficient gas burner devices, but not more than:
3 million UZS - for solar photovoltaic stations;
1.5 million UZS - for solar water heaters.

VI. CONCLUSION

In May 2019, the Laws of the Republic of Uzbekistan "On the Use of Renewable Energy Sources" and "On Public-Private Partnerships" were adopted, which create a regulatory framework to accelerate the implementation of renewable energy projects.
At the same time, in accordance with the decree of the President of the Republic of Uzbekistan dated 10.23.2018. No. PP-3981 "On measures for accelerated development and ensuring financial stability of the electric power industry", including the following tasks: to develop a modern scheme for organizing the production of electric energy, while providing for the wide attraction of private, including foreign, direct investments in enterprises producing electric energy, including on public-private partnership terms and to work out with potential investors new investment projects in the electric power industry under PPP conditions, the outcome of the existing resource base, modern technological trends and the use of alternative energy sources. In this connection, today, the Ministry of Energy, in order to diversify the generation structure towards increasing the specific share of renewable energy sources, is implementing a series of measures aimed at implementing investment projects in the field of renewable energy sources on the principles of public-private partnership (PPP).
The introduction of PPP mechanisms in the field of renewable energy will ensure the attraction of leading foreign companies with advanced innovative technical and technological solutions to the market for generating foreign direct investment as independent producers of electricity (IPE).
It should be noted that the implementation of investment projects in the field of renewable energy under the terms of PPPs has many advantages, since the entire process of project implementation (raising funds, conducting a feasibility study, choosing technologies, the process of logistics, construction and installation, operation of an energy facility during its life cycle and ownership process) refers to the responsibility of the investor, and the task of a single purchaser of electric energy, i.e. JSC "National Electric Networks of Uzbekistan" to carry out guaranteed purchase of generated electricity.
According to the resolution of the Cabinet of Ministers of 08.08.2018. No. 633 on the part of the International Finance Corporation, a competitive selection of potential companies was carried out for the implementation of a pilot investment project of a solar power plant with a capacity of 100 MW in the Navoi region on the basis of PPPs and based on the results of (04.10.2019) Masdar Energy (UAE) with a tariff of 2.679 was recognized as the winner US cents / kWh. The term for putting the solar photovoltaic power plant into operation is scheduled for the 1st quarter of 2021.
Currently, the EBRD, based on the Memorandum of Understanding of 01/14/2019.signed between the EBRD, the State Investment Committee and JSC Uzbekenergo, through donor funds, agreements were concluded with Juru Energy (Great Britain) and Synergy Consulting (India) to provide consulting services and conduct relevant technical studies as part of the auction for construction 100 MW wind farm in the Republic of Karakalpakstan.

REFERENCES

1. Law of the Republic of Uzbekistan of December 9, 2014, No. ZRU-380 —On investment activity (new edition)
2. Law of the Republic of Uzbekistan of May 3, 2019,- "On the use of renewable energy sources"
3. Presidential Decree of the Republic of Uzbekistan of February 9, 1998 No. UP-1924 —On measures to improve the mechanism for implementing projects with foreign investments
4. Decree of President MirziyoyevSh.M. —On the Action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021.
5 Allaev K.R., Basidov I.S., Sadullaev E.F. The power industry of Uzbekistan over the years of independence and the prospects for its development. T. Ishonch, 2016, 255 p.
6. Shishkin A.N. The modernization of Russian energy is a key objective of energy policy. M. Slide of the Ministry of Energy of the Russian Federation, 2010, p. 38.
7.http: //publ.naukovedenie.ru. Efremova S. M. Justification of the strategy for the modernization of industrial production.The online journal "Science of Science" No. 4, 2013.

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Subject of course	Country	Organized by	Duration of studies	Year
Training of Trainers Courses - Interactive Methods of Education of Adults	Uzbekistan	UNDP	1 week	2010
Training of Trainers Courses –Management of innovations.	Tashkent	UNDP	1 week	Oct 2010
Training of Trainers Courses - Innovative business	Tashkent	UNDP	1 week	Nov 2010
Training of Trainers Courses - Bases of innovative activity, transfer and commercialization technologies.	Tashkent	UNDP	1 week	Dec. 2011
ICT and Women Entrepreneurs2012	Israel	MASHAV Israel's Agency for International Development Cooperation Ministry of Foreign Affairs	1 month	Dec. 2012

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2011-2012Technology Transfer Agency (TTA), National Consultant to UNDP Project Support of Innovation Policy and Technology Transfer.
2012- 2014Senior researcher of the Project " Development of the theory of investment potential and scientific researchthe basics of building a mechanism for its formation in the conditions of modernization andinnovative development of the economy of Uzbekistan

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