



HISTORICAL INTERPRETATION OF THE SERVICE SECTOR ON THE RAILWAYS OF UZBEKISTAN

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***Annotation.** This article discusses the issues of electrification of railways in Uzbekistan from the years of independence to the present day, as well as the advantages and disadvantages of this activity.*

***Key words.** Railway transport, "Railways of Uzbekistan," electrification, power supply, diesel locomotive, electric locomotive, ecological problem, "green transport."*

Introduction.

From the first days of independence, it was planned to develop the railway system, which is one of the leading sectors of the economy of Uzbekistan, based on a comprehensively thought-out and predetermined plan. Promising projects implemented and actively pursued in the sphere are yielding positive results today.

During the years of independence, the issue of electrification of existing railways in Uzbekistan was considered as an urgent task, and special state programs were adopted and implemented in this area. Because the electrification of railways serves not only to save fuel resources and maintain environmental cleanliness, but also to increase the speed of passenger and freight trains.

It is known that electric traction on railways is more reliable and efficient than on diesel locomotives. Electric trains have several

advantages over diesel locomotives, primarily in areas where movement is difficult due to Uzbekistan's dusty and hot climate, using electric locomotives is preferable to diesel locomotives. At the same time, the movement of trains by electricity prevents atmospheric pollution, reduces noise, and increases the speed of movement.

Literature review.

Analyzing the literature related to the article, a number of researchers have worked on the issues of electrification of railways. In particular, Tabash Sarybayev's work "45 Years of Electrification" highlights the electrification work carried out in railway transport after our country gained independence and its positive aspects for socio-economic life. He emphasized that the electrification of railways will not only positively change the domestic transport system in Uzbekistan, but will also make a significant contribution to the creation and development of international transport corridors.

In addition, in the scientific publications of R. Khaydarov and A. Korzhovov, the activities of electric trains in Uzbekistan, their positive impact on nature, economic efficiency, and faster movement compared to diesel locomotives were highlighted.

Obtained results and their discussion.

If we look at the history of railway electrification, then in the Uzbek SSR, work on the electrification of railways for continuous operation with electricity began in 1971. Since 1986, a number of measures have been taken to ensure their operation on alternating current[12].

In particular, in 2000, within the framework of the Uzbek-German Forum on the project of transport connecting the Fergana Valley with other regions of Uzbekistan, the issue of electrification of the Tashkent-

Angren section came to the forefront. The main goal of this project was to accelerate the delivery of important goods, such as coal and petroleum products, with minimal movement, and to further improve the quality of public services[13].

On September 1, 2003, within the framework of the electrification of the Tokimachi-Angren region, the Tokimachi-Sergeli-Tashkent-South railway line with a length of more than 10 kilometers was electrified and put into operation. This, in turn, made it possible to increase the voltage level in the Jizzakh-Bogarnoe communication network and lift existing capacity restrictions in this area. In 2007, in accordance with the Decree of the President of the Republic of Uzbekistan [3], electrification work began at the 2nd stage of this project. It was determined that the activities at this stage will be carried out directly at the expense of the German Development Bank and the Kuwait Fund for Arab Economic Development, as well as the own funds of JSC "Uzbekistan Railways" (now JSC). The total cost of the project is 79.395 million US dollars, and its length is 118.6 kilometers. The implementation of this project has had a positive impact on solving the problem of employment by reducing total costs by 1.8 times, improving the environmental situation in the region, creating 50 additional jobs. The final stage of electrification work was carried out on July 27, 2010. As a result, the city's railway infrastructure was fully electrified[17;97-98].

The issue of electrification of Uzbekistan's railways was also discussed at the negotiations held between Japan and Uzbekistan in April 2000. This project was adopted by Japan, and in accordance with the terms of the agreement, JSC "Temiryulloyiha" developed the legal,

economic, and technical basis for the electrification of the Marokand[6]-Bukhara-Karshi and Marokand-Karshi sections in 2001[17;102].

By 2015, the electrification of the territory from Marakand to Karshi was completed. More than 160 workers and specialists were involved in this project, which is 140.8 kilometers long, and more than 10 units of special equipment were used. A distinctive feature of this project was the increase in transportation speeds to 160-200 kilometers per hour[17;103-104]. Its most important advantage is that it has begun to incur less costs during the delivery of goods compared to before. It should be noted that, as in other regions, after the electrification works, train traffic was made completely harmless to the environment.

In December 2001, negotiations were held between the US Trade Development Agency and Uzbekistan Railways on the development of the country's railway transport system. According to the memorandum signed between the parties, an agreement was reached on the electrification of the Maroqand-Navoi, Navoi-Uchkuduk, Navoi-Bukhara, Bukhara-Karshi railway sections. Based on this agreement, in July 2002, an "Agreement on Grant Allocation" was signed between the USA and Uzbekistan to finance the electrification project. This grant will be implemented by Lemna International Inc. (USA) [16]. As a result of the launch of this project, the railway line from Samarkand through Navoi and Bukhara to Kashkadarya region was electrified and put into operation.

At the same time, the issue of ensuring uninterrupted power supply on the republic's railways was raised. In order to ensure the stable operation of power supply devices, a "Program of Large-Scale Work on the Modernization of Operating Technical Means of the Power Supply

Economy for the Period up to 2005" has been developed. As a result of this program, major repairs of cables used for more than 20 years, the introduction of new and modern electrical equipment, and the installation of high-precision electronic meters were carried out[15].

At the meeting of the Cabinet of Ministers of the Republic of Uzbekistan dedicated to the results of the country's socio-economic development in 2014 and the most important priorities of the economic program for 2015, among the issues to be resolved in the field of railway transport, the task of carrying out work on the electrification of the Samarkand-Bukhara railway section was also set. The project cost is about 400 million US dollars, and the length of the road is 291 kilometers[9].

In 2013, a major project was launched to connect the Fergana Valley with other regions of the country by rail. The Angren-Pap-Kokand-Andijan railway was one of the important projects providing transport services to almost a third of the population of Uzbekistan. The construction of the railway in this direction was completed in 2016. Now the main task was the issue of electrification. At the initiative of President Shavkat Mirziyoyev, work on the electrification of the Pop-Namangan-Andijan railway began in 2017. A total of \$202.3 million was allocated for this project, which is 145 kilometers long, of which \$80 million was financed by the Asian Development Bank[5].

The railway tunnel at the Kamchik Pass has a unique feature, which not only serves to connect the Fergana Valley with the rest of Uzbekistan, but is also important for interaction with the railway system of Kyrgyzstan and China. This structure, with a length of 19.1 kilometers, is one of the largest of its kind in Central Asia. In the world

ranking, it ranks 8th in terms of the complexity of tunnels located in mountainous areas, and 13th in terms of the length of the railway line in the tunnel[17;107].

On February 21, 2012, in accordance with the decree of the President of the republic[6], electrification work began on the Karshi-Termez railway line. \$160.3 million was allocated for the project[1]. On January 9, 2018, the opening ceremony of this electrified railway with a total length of 325 kilometers took place[14]. The historical significance of this project lies in the fact that the electrification of the road will not only bring economic and social benefits to our country, but also create enormous opportunities for connecting transport corridors with neighboring and foreign countries.

On December 28, 2020, the President of the Republic Sh. In accordance with the decree "On Measures for the Implementation of the Investment Program of the Republic of Uzbekistan for 2021-2023,"[10] put forward by Mirziyoyev, electrification work began in March of this year to ensure the movement of high-speed trains on the Bukhara-Khiva-Urgench route.

Today, the tourism sector is one of the leading sectors of the economy. In order to further develop domestic and foreign tourism, the improvement of the transport system is one of the pressing issues of the modern world. It is also important to attract not only foreign, but also local tourists to Uzbekistan, whose tourism potential is highly valued. For carrying out this activity, a high-quality and safe, fast and modern, economically and technically convenient transport system is extremely necessary. To achieve this goal, in 2011, for the first time in the history of Uzbekistan and Central Asia, high-speed Afrosiyob electric trains were

launched on the Tashkent-Samarkand route. Later, residents of Karshi, Bukhara, and Shakhrisabz also benefited from such high-speed trains. At the next stage, the main task was to extend the movement of "Afrosiyob" electric trains to the cities of Urgench and Khiva. It should be especially noted that until 2017, trains running from Tashkent to Urgench covered a distance of 1064 km along the Navoi-Uchkuduk-Miskin route, and after the construction of the Bukhara-Miskin railway line with a length of 355 kilometers, the distance between them decreased by almost 100 kilometers. The next task to be completed was the electrification of this direction. The total length of the Bukhara-Urgench-Khiva route is 465.5 kilometers[4;3].

Upon completion of the project, high-speed, environmentally friendly electric trains will be launched on the Tashkent-Samarkand-Navoi-Bukhara-Urgench-Khiva route. As mentioned above, such projects save a large amount of fuel. Reduces the negative impact on the environment. By increasing the speed of movement, the quality of service improves.

In our country, work on the electrification of railways is being carried out not only to this day, but also large-scale plans are being developed for tomorrow. In particular, the delivery of electric trains to the city of Khiva by 2024 is one of the pressing issues. During its implementation, this project was also included in the Republic's investment program for 2022-2026[11]. The total cost of the project is 445 million dollars. The total length of the electrified road exceeds 465 kilometers. As a result of the project, the efficiency of the railway will increase, in particular, the speed of trains will reach up to 250 kilometers per hour. The travel time from Tashkent to Urgench will be reduced from

14 to 6 hours, and the distance between Bukhara and Khiva will be reduced from 8 to 3 hours. Due to the increase in speed, the volume of cargo transportation will increase to 11 million tons per year, and the number of passengers will reach 2.3 million people. Due to electric trains, 18 thousand tons of diesel fuel will be saved per year. In the near future, it is planned to electrify the territory up to Nukus. As a result, the travel time from Tashkent to Nukus will be reduced from 16 hours to 7 hours[8].

Large-scale projects in the railway sector are also planned in the New Uzbekistan Development Strategy. In particular, it is expected that increasing the share of railway infrastructure electrification to 60% will be a huge step in this direction[2].

Conclusion.

As noted, the issue of electrification of railways occupies an important place among the measures being implemented in the industry as a result of further strengthening the role of railways in the country's economy. In this regard, a number of projects are being implemented in our republic, for which a very large amount of funds is being allocated. It is noteworthy that, along with our national funds, foreign countries such as Japan and the USA are also investing in the projects being implemented and planned for the electrification of railways. The electrification of railways is significant because, along with increasing the speed of trains and achieving fuel efficiency, it also serves to prevent the negative impact of railway transport on the environment. Therefore, great attention is being paid to the implementation of measures and projects in this area in the future.

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